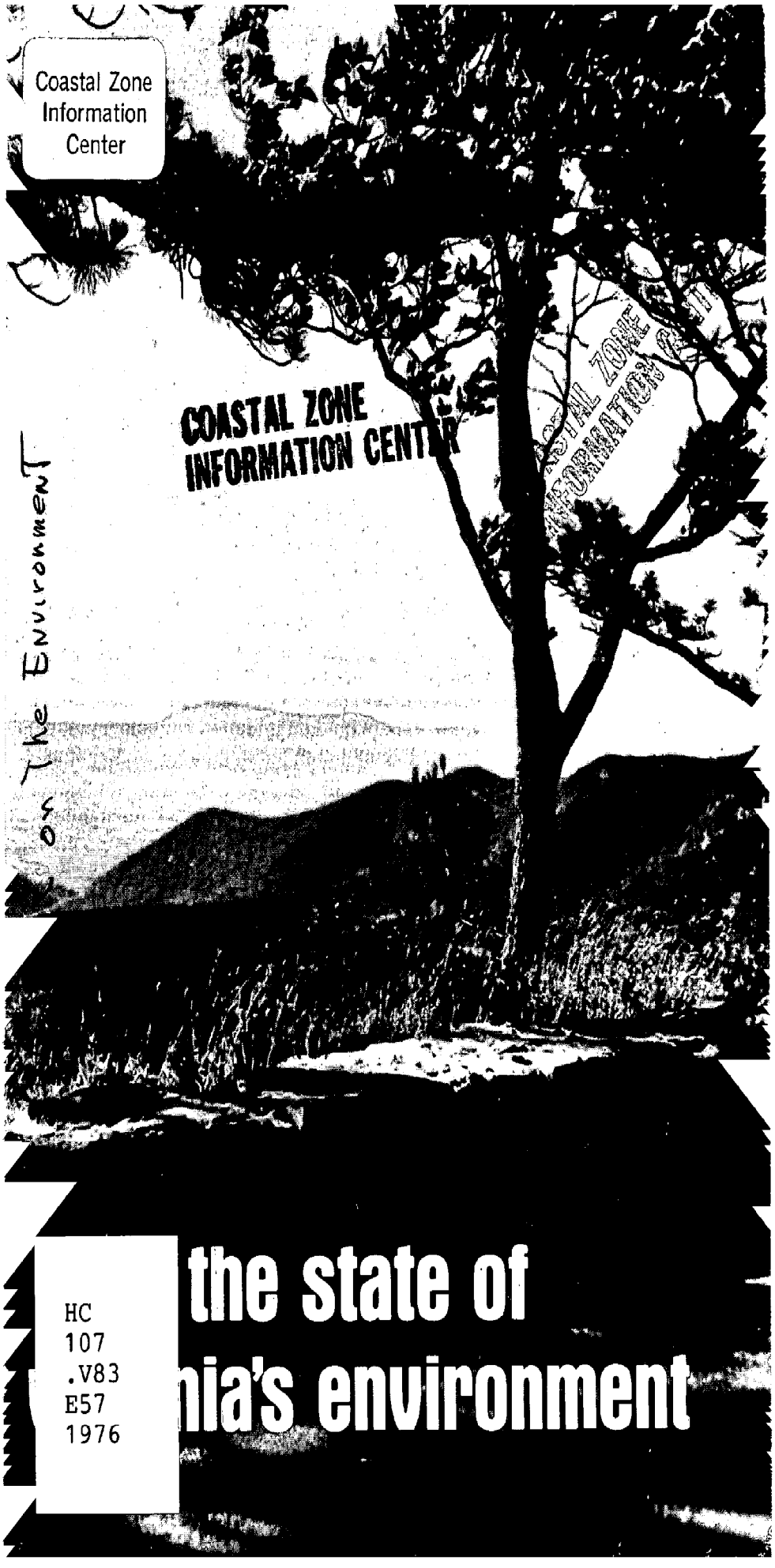

the state of
nia's environment

Purpose of This Report

This report presents the annual summary of the activities of the Council on the Environment during fiscal year 1975-76, as well as an evaluation of the present state of Virginia's environment and the related trends and policy choices facing the Commonwealth. Recommendations about significant policy and management issues regarding the protection of Virginia's environment are presented. Additionally, the Administrator's recommendations about overall environmental management in the Commonwealth have been offered. The goal of these efforts is an improved quality of life for all Virginians for the long term.

the state of virginia's environment

Annual Report of the Council on the Environment

covering the period
July 1, 1975 - June 30, 1976

Presented to

THE HONORABLE MILLS E. GODWIN, JR.
Governor of Virginia

December, 1976

The Council on the Environment
Membership

Chairman and Administrator:
GERALD P. McCARTHY

Executive Committee:
MR. FITZGERALD BEMISS
MR. RICHARD D. ROBERTSON
DR. T. EDWARD TEMPLE

COLONEL J. LEO BOURASSA
Chairman, State Water Control Board

MR. JAMES E. DOUGLAS, JR.
Commissioner, Marine Resources Commission

MR. HENRY C. GREEN
Chairman, Soil and Water Conservation Commission

DR. J. B. KENLEY
Commissioner, State Department of Health

MR. AXEL T. MATTSON
Chairman, State Air Pollution Control Board

MR. FRED W. WALKER
Chairman, Board of Conservation and Economic Development

MR. RALPH WEAVER
Chairman, Commission of Game and Inland Fisheries

COMMONWEALTH of VIRGINIA

GERALD P. McCARTHY
CHAIRMAN AND
ADMINISTRATOR

Council on the Environment

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December 1, 1976

Honorable Mills E. Godwin, Jr.
Governor of Virginia
State Capitol
Richmond, Virginia 23219

Dear Governor Godwin:

Pursuant to Title 10, Chapter 17, of the Code of Virginia, and on behalf of the Council on the Environment, I am pleased to transmit herewith a copy of the annual environmental and management report on the state of Virginia's environment.

This report addresses significant activities and accomplishments, as well as plans, toward the goal of environmental quality as embodied in Article XI of the Constitution of Virginia. It notes definite progress in the Commonwealth's efforts to encourage stewardship of land, water and air resources. I call your attention particularly to the chapter on significant environmental issues facing Virginia. Our policy and management recommendations in this regard are respectfully submitted in this section.

I wish to express the gratitude of the Council on the Environment for your continued leadership in guiding the Commonwealth in the prudent use and management of her resources toward the end that a healthy long-term balance between environmental protection and economic well-being can be maintained.

Respectfully,

Gerald P. McCarthy

GPM:kfk

Enclosure

Contents

Introduction

The Council on the Environment is Virginia's coordinating agency for environmental quality matters. Its purpose is to implement the environmental policy of Virginia as embodied in the Virginia Environmental Quality Act (see Appendix). This Act directs the Council "...to initiate, implement, improve and coordinate the environmental plans, programs, and functions of the State in order to promote the general welfare of the people of the Commonwealth and fulfill the State's responsibility as trustee of the environment for the present and future generations." The Council's purview extends to all State agencies and includes the specific mandate that all existing and proposed State policies be consistent with the Commonwealth's environmental policy.

The Council is composed of eleven members. The Chairman is appointed by the Governor as are the three citizens appointed at-large who serve as the executive committee. The remaining members include the Chairmen or Commissioners of Virginia's agencies responsible for environmental protection and management. In addition to the Council Administrator, the staff includes an Environmental Impact Statement Coordinator, a research specialist and three secretaries. The position of Assistant Administrator, approved by the 1976 General Assembly, takes effect July 1, 1976.

During fiscal year 1975-76, the Council conducted activities in four program areas: Policy Advisory, Program Coordination, Project Coordination, and Education and Public Relations. These activities reflect a change in emphasis from previous years on environmental policy *initiation* to program *implementation.*

The goals of the four program areas are:

•**Policy Advisory** - To develop policy recommendations for dealing with the environmental choices substantially affecting the Commonwealth over the next twenty years; and to advise the Governor, the Secretary of Commerce and Resources, and the General Assembly on the effectiveness of State environmental policies and programs.

•**Program Coordination** - To assure coherence and coordination among State environmental programs, to see that overall environmental priorities are established and supported with funds and personnel, and to promote efficiency of management among the agencies of the Council.

•**Project Coordination** - To promote environmental values in decision-making about major projects; to coordinate, consolidate, and expedite the permit review process; and to coordinate all state communications with federal agencies relating to environmental evaluations.

•**Education and Public Relations** - To assure cooperation with federal, interstate, state, regional and local organizations, both private and public; and to give citizens the opportunity to contribute ideas regarding environmental quality.

Part I of this report provides an overview of the activities in each of these areas which have received particular attention during fiscal year 1975-76.

Part II lays out for public discussion the facts about environmental quality in Virginia and points out potentially useful concepts for dealing with these realities and the trends they indicate. After dealing with broad trends over the next twenty years, Part II discusses particular issues of environmental importance to Virginia now and in the future.

The Administrator's environmental management recommendations are addressed in Part III of this report. This section assesses a number of management problems in Virginia that inhibit the State's progress toward meeting the purposes of the Virginia Environmental Quality Act. Recommendations are intended to provide for a central focus of environmental management in Virginia and, consequently, to provide for uniform management systems that will assure coherent environmental policies.

The Council on the Environment gratefully acknowledges the help of its members and other agencies, including the Virginia Institute of Marine Science, Virginia Historic Landmarks Commission, Commission on Outdoor Recreation, Department of Agriculture and Commerce, and the Coastal Resources Management Program, who supplied information about their activities for this report.

Part I:
Council Activities

Policy Advisory

Land Resources

In 1971 the Council, in its first Annual Report, declared that "...land use and development is a fundamental determinant of environmental quality and that existing policies and mechanisms for land management are inadequate to carry out [Article XI of the State Constitution]." The Council at that time coined the terms "key facilities" and "critical environmental areas." Though certain land use planning requirements have since been made mandatory, and a wetlands law and an erosion control law have been passed, the more complicated questions of Key Facilities and Developments of Greater than Local Significance remain to be addressed legislatively.

In August 1974 a Land Use Council was created by Earl J. Shiflet, Virginia's Secretary of Commerce and Resources, to assist him in resolving the complex issue of the use of land as it relates to the economic and environmental well-being of the Commonwealth. The Council's work was divided into 14 categories, with the initial work in the first two categories of Key Facilities and Developments of Greater than Local Significance.

Key Facilities. The focus on Key Facilities resulted in a report to the Governor, the development of which involved the participation of the Administrator of the Council on the Environment. Related legislation designed to implement the recommendations of that report was introduced in the 1976 session of the General Assembly and carried over for consideration by the 1977 session. If passed, this legislation would, among other things, broaden the scope of the Council on the Environment's role in the environmental impact review process.

Developments of Greater Than Local Significance. The Land Use Council's work in the area of Developments of Greater Than Local Significance has been its primary emphasis during the latter part of this past year. The Administrator of the Council on the Environment has chaired this effort. It is hoped that a report including specific management recommendations will be completed for submission to the Governor in the fall of 1976 and that appropriate legislative action will follow.

Transportation. The Administrator of the Council is an Ex Officio member of the Governor's Council on Transportation, an advisory council charged with making recommendations on problems and issues affecting transportation and the resulting impact on the economy, environment, and well-being of the Commonwealth. Also, this Council will provide advice to assure that transportation is effectively utilized in the public interest as an economic resource, and that transportation planning and operations are coordinated with the State's energy goals and economic and environmental plans and requirements. The Transportation Council has divided its work into two categories, each represented by a task force. One is concerned with the transportation needs of Northern Virginia, and the other with overall transportation policy and plans, as well as an evaluation of particular modes of transportation, i.e., air, rail, ports and waterways, highways, and mass transit. An interim report to the Governor is due in December 1976, with a final report to be completed in the fall of 1977.

The Commonwealth of Virginia adopted a position on the Concorde Supersonic Transport Aircraft, which the Council on the Environment staff helped to develop and which was presented by Virginia's Secretary of Transportation in January 1976. Subsequently, the U.S. Secretary of Transportation decided to permit a 16-month trial period of operation of the British-French SST into Dulles International Airport in Northern Virginia, subject to close monitoring by the Federal Aviation Administration. State and local officials in Virginia have been promised regular reports assessing the environmental consequences of the flight operations from the Federal Aviation Administration.

Water Resources

Water Resource Management. Water resource management has received priority emphasis by the Council on the Environment during the 1975-76 fiscal year. After months of preliminary study by the Council and its staff, Secretary Shiflet asked the Council in May 1976 to coordinate an overall study on water resource management in Virginia.

The purpose of this study is to ascertain the water resources needs and opportunities in Virginia, and to find out what is being done—or yet needs to be done—about them. In short, the study will look at where the State needs to go and how it can get there.

In response to the Secretary's request, the Council held a series of meetings with representatives of the State Water Control Board and the Office of the Attorney General to determine the direction of the study effort. The Environmental Law Committee of the Young Lawyers' Section of the Virginia Bar Association generously agreed to help with the study. In June, a series of interviews was begun with State agencies and with public and private organizations to ascertain the views of a broad spectrum of water users and resource management agencies.

For the next year, the Council plans to continue its emphasis and study of the water resource situation in the Commonwealth. Secretary Shiflet has asked for a draft report to be completed by October 1976. The Council plans to complete this draft, circulate it among concerned State agencies for comment, and then to submit it to Secretary Shiflet for whatever action appears warranted.

Interbasin Transfer of Water. One aspect of special interest and concern in many parts of Virginia is the transfer of water between river basins, or interbasin transfer. In March 1976, the Council on the Environment circulated among interested State agencies an 80-page draft report addressing this issue. The draft, which was intended to contribute to a clearer understanding of the problems involved, provided a focal point to initiate discussion on the subject, and elicited many comments. The study of interbasin transfer is an integral aspect of the overall study of water resource management in Virginia, and should be pursued by the appropriate State officials in the next year.

Channelization. The Council on the Environment has asked the State Water Control Board (SWCB) to reexamine the subject of channelization of Virginia's streams and to consider whether a regulatory program beyond the guidelines adopted to this point would be advisable. An updated report reaffirming the Board's reliance on advisory guidelines and voluntary cooperation was subsequently submitted to the Council. Memoranda of understanding between the SWCB and other State and federal agencies are under negotiation. The Council continues to maintain a strong interest in this subject.

Scenic Rivers. Two studies were conducted by the Commission of Outdoor Recreation to propose candidate rivers to the 1976 session of the General Assembly for inclusion in the State Scenic Rivers System. These were segments of Goose Creek and the Rappahannock-Rapidan Rivers. The Council on the Environment provided staff liaison during the development of the studies, which resulted in the adoption of the Goose Creek proposal by the General Assembly.

Since that time the Council staff has served on the State agency advisory committee for two additional Scenic Rivers studies, segments of the Appomatox River and Catoctin Creek. Final reports are expected in the fall of 1976 to serve as the basis for consideration by the 1977 session of the General Assembly.

Coastal Resources

The Coastal Resources Management Advisory Committee was created by Secretary Shiflet to involve appropriate State agencies in the development of a Coastal Resources Management Plan for Virginia. The Administrator of the Council on the Environment has participated in this committee's activities, which are scheduled for completion by the end of 1977.

The Virginia General Assembly established the Coastal Study Commission in 1975 to address the impacts of Outer Continental Shelf oil and gas development. The scope of concern of this Commission, chaired by State Senator Joseph V. Gartlan of Fairfax, has since been broadened by the 1976 session of the General Assembly to include oversight of all coastal resources management activities. The Council's Administrator also has worked closely with this group.

The Coastal Plains Regional Commission is a federal-State compact comprising the states of Virginia, North Carolina, South Carolina, Georgia, and Florida. Governor Godwin is a member of the Commission along with the governors of the other member states. The Commission was established in 1965 to bring the federal government into an effective

partnership with state and local governments in a full-scale effort to close the "income gap" in the 240-county coastal plains region. In its efforts to foster and induce orderly, accelerated economic growth in this region, environmental considerations have been recognized, and an ongoing economic/environmental liaison has been established. In this regard Governor Godwin appointed the Administrator of the Council on the Environment to serve on an Environmental Affairs Advisory Committee to the Commission.

Energy

Outer Continental Shelf Activities. The staff of the Council on the Environment has been working closely with the Virginia Energy Office to plan for the impact of possible discoveries of oil and gas from the Atlantic Outer Continental Shelf. In particular, the Council Administrator has participated in the deliberations of the Middle Atlantic Governors' Coastal Resources Council, which has led the State's efforts to assume sensible development of the resources with strict environmental controls. This group has published a report, *Identification and Analysis of Mid-Atlantic Onshore Outer Continental Shelf Impacts,* designed to identify the nature and magnitude of onshore socioeconomic and environmental impacts, the management decisions and associated informational needs required under existing legislation and regulations, and the possible effects of the policy options contained in proposed legislation.

Hampton Roads Energy Company's Proposed Oil Refinery. In November 1975 the Hampton Roads Energy Company applied to the Norfolk District, Corps of Engineers, for a Department of the Army permit to perform work in navigable waters of the Elizabeth River at Portsmouth, Virginia. The subject work was associated with the construction of an oil refinery and marine terminal for the handling and production of petroleum products. Subsequently, the Corps of Engineers prepared a Draft Environmental Impact Statement concerning the proposal, which was reviewed by the State. The Council on the Environment prepared the State's coordinated response to the document addressing the project as proposed at that time. The company has since changed its original plans for the treatment of the water wastes expected as a result of the refinery's operation and is expected to apply for a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Control Board (SWCB) in the fall of 1976. A decision by the Board is expected in early 1977. If the SWCB grants the NPDES permit, the State's review of the project will resume and the Corps of Engineers will complete its consideration of the proposal.

Nuclear Energy. The Administrator of the Council on the Environment participated in the fiftieth American Assembly in April 1976, the subject of which was nuclear energy. The Assembly drew experts from a wide variety of fields together for a four-day conference culminating in a report which concluded that, "The peaceful uses of nuclear power offer us at this time a significant possibility of moving in the direction of a world with an improved quality of life for all people. The cost to mankind of not pursuing the nuclear option could be tragic."

The Assembly made recommendations about meeting expected energy needs, instituting strong energy conservation measures, and pursuing

both coal and nuclear power as energy sources. Conclusions were also reached in the areas of nuclear safety and waste disposal, uranium enrichment and processing, nuclear exports, and public education.

Toxic Substances

Governor Godwin created a Kepone Task Force in December 1975 and appointed the Administrator of the Council on the Environment to serve on it. The activities of the Task Force have included determining the extent of the problem, clean-up of Life Science, Inc., advising the Governor on appropriate actions, and developing legislative recommendations aimed at preventing the recurrence of a tragedy similar to that produced by Kepone contamination in Virginia.

Subsequently, Governor Godwin proposed, and the General Assembly adopted, several laws based on the recommendations of the Kepone Task Force. The Task Force is continuing its work, focusing now on finding solutions to the current problems associated with Kepone, particularly the elimination of Kepone contamination from the environment.

Pursuant to one of the Kepone Task Force legislative recommendations, the 1976 session of the General Assembly enacted the "Toxic Substances Information Act." The Toxic Substances Advisory Council, created by the Act, is a body formed to advise the State Board of Health in devising a program and strategy to implement this law. The Board of Health is charged with the collection and distribution of information on the manufacturing and emission of toxic substances in Virginia and has been developing regulations to carry out the Act.

Solid Waste and Resource Recovery

The Council on the Environment continued its close working relationship through its Administrator with the State Solid Waste Commission. The Council Administrator helped plan, and participated in, a major conference on solid waste in May 1976, which attracted experts from around the nation with scientific, economic, and environmental backgrounds. The purpose of the conference was to explore the experiences of other states and regions as a preliminary to developing a statewide solid waste management plan for Virginia.

Litter Control. In January 1976, in an effort to provide useful information for the 1976 session of the General Assembly, the Council prepared a document addressing the issues inherent in litter control legislation. The report focused on these methods of litter control as a means to clean up litter, reduce waste, and recover resources:

* Taxation as an incentive to the consumer to substitute non-litter related items,
* Behavior modification as a means of changing public attitudes towards littering, and
* Mandatory deposit legislation as a means of making bottles and cans, two major portions of the litter problem, valuable enough to ensure their return to industry.

The Solid Waste Committee of the Council on the Environment voted to support all three of these measures.

The 1976 General Assembly enacted a litter control law that embodies the first two methods cited above, and carried over to 1977 several bills relating to mandatory refundable deposits.

Dredge Spoils. Secretary Shiflet established a Task Force which began its work in June 1976 to examine alternatives for the disposal of dredged materials from the channels of the Port of Hampton Roads. A major objective of the Task Force work has been to assign priorities of alternatives in terms of minimizing environmental effects and ultimate economic value to the Commonwealth. The Task Force is expected to develop a program which will allow Virginia to deal most effectively with future dredge spoils, and to recommend policies for the State to adopt relative to specific responsibilities of both the federal government and the State in developing dredge disposal sites. Specific related concerns are site acquisition, site development, and site operation. Additionally, the Task Force is developing policy recommendations for Virginia on the future use of the Craney Island site. It is anticipated that the Task Force recommendations will be submitted to Secretary Shiflet during the next fiscal year.

Land Application of Sewage Sludge. At the Council's initiation, the Department of Agriculture and Commerce formed a study committee to look into land application of sewage sludge. This committee provided a report to the Council and worked with the State Department of Health and State Water Control Board to formulate regulations for land application. The regulations have been published in draft form; and final regulations are to be adopted after public hearings and further evaluation. The Council retains a great interest in pursuing safe, economically-sensible alternatives to incinerating or landfilling sewage sludge.

Program Coordination

Multiple Permit Coordination

Legislation enacted by the 1976 General Assembly provided for strengthening the role of the Council on the Environment with respect to the coordination of the State regulatory process for major projects requiring multiple state permits (§ 10-184.2 of the Code of Virginia). To implement this responsibility, a Task Force was created during the spring of 1976 with a representative from each of the agencies specifically cited in the law. Additionally, a representative from the Virginia Institute of Marine Science, the Division of Industrial Development, and the Attorney General's Office were invited to serve on the Task Force. The objective of this Task Force is to develop plans, rules, regulations, and procedures for implementing the law.

Preliminary recommendations from the Task Force are expected in the form of a report to the Council on the Environment in the fall of 1976. After action by the Council, the report will be circulated among interested individuals and organizations, and public hearings will be held before any regulation will take effect.

Federal Permit Notice Coordination

The Council continued negotiations throughout the year to accept responsibility from the Division of State Planning and Community Affairs for coordinating the review and response of State agencies regarding federally-permitted projects in Virginia's navigable waters. On June 1, 1976, the Governor designated the Council to serve in this capacity and directed the Administrator to coordinate all State agency communications involving notices issued by the U.S. Army Corps of Engineers and U.S. Coast Guard, to resolve any differences that might arise among these agencies, and to draft a coordinated State response to the notices.

This is a logical addition to the environmental impact statement review responsibilities, especially as the environmental impact statement review process is, according to statute, the next procedural stage for any of the subject projects that are determined to have a potentially significant environmental effect. An evaluation of appropriate methods for the integration of the two processes will be a key focus of staff activities during the next fiscal year. Specific procedures for the coordination of the U.S. Army Corps of Engineers and U.S. Coast Guard notification process are currently under consideration.

Joint Environmental Agencies Budget

In connection with the responsibilities of the Administrator to coordinate the preparation of a joint environmental agencies' budget, the Council has been active in the transition of the Executive Branch from line-item budgeting to program budgeting. The first step for the Council was the preparation of the joint environmental agencies' budget in a program budget format. This format has proved particularly useful for comparison of funding allocated to different types of environmental management, e.g., forestry, recreation, air pollution control, etc.

The Council has also participated in efforts to refine the program structure and work with the environmental agencies in preparing for the next biennial budget, which will be in program form.

Representatives of the Council staff attended a series of interviews to effect this change with the State's environmental agencies, the Budget Office, and the Division of State Planning and Community Affairs. (Certain functions of these agencies were merged by the 1976 session of the General Assembly into the Department of Planning and Budget.)

The Council intends to continue its work in the coordinated budget management process for environmental concerns after further clarification of the respective roles of the Secretary of Commerce and Resources, Council on the Environment, and Department of Planning and Budget.

Project Coordination

Environmental Impact Statements

During the twelve month period of fiscal year 1975-76, the Council on the Environment coordinated the review and evaluation of 75 environmental impact statements for federally sponsored projects. Included in this number were 19 documents addressing projects proposed by the U.S.

Army Corps of Engineers, ten by the U.S. Department of Transportation, and approximately five apiece for the U.S. Department of the Interior, the U.S. Department of Agriculture, and the Federal Power Commission. The remainder were submitted by various other federal agencies, such as the Environmental Protection Agency, the Nuclear Regulatory Commission, and the General Services Administration.

Additionally, during this period the Council coordinated the review and evaluation of environmental impact statements submitted for approximately 50 projects proposed for State funding. This number includes 28 parks and recreation projects. Most of the remainder were building projects such as office and headquarters buildings, maintenance buildings, and academic buildings for community colleges.

A coordinated response was submitted to the appropriate individuals in each case. Monthly lists of projects under review, quarterly status reports addressing the review process, and final evaluations for the various projects were prepared and submitted to everyone expressing an interest.

Procedural refinements were made through the year to increase the efficiency and effectiveness of the environmental impact statement program in Virginia. The culmination of the efforts of the Council in this direction was the preparation and circulation of the *Procedures Manual and Guidelines for the Environmental Impact Statement Program in the Commonwealth of Virginia* in June 1976.

Education and Public Relations

External Representation

The Administrator of the Council on the Environment had a number of speaking engagements during the 1975-76 fiscal year with business, civic, and environmental groups with an interest in Virginia's environmental policies and programs.

Testimony representing the National Governor's Conference was also presented by the Council Administrator before the House Merchant Marine and Fisheries Subcommittee on Fisheries and Wildlife Conservation and the Environment in Washington in September 1975. The testimony related specifically to an evaluation of the National Environmental Policy Act and the environmental impact statement process as a result of an extensive questionnaire to various states from the National Governor's Conference.

Other examples of the Council Administrator's external representation during this period include serving with the Southern Interstate Nuclear Board to help define appropriate state and interstate mechanisms for the siting of nuclear power plants, and assisting the American Society for Public Administration in establishing an Environmental and Natural Resources Committee.

Newsletter

Fiscal year 1975-76 was the second year in which the Council on the Environment published a newsletter which was distributed broadly as a service to individuals and groups interested in an overall perspective on

environmental issues. The newsletter contains a feature article on policies or programs of major and timely concern in the State, analysis of significant activities and legislation, and a calendar of environmental events. Contributions from readers and letters to the editor have been encouraged. This service will be continued into the next fiscal year.

Conferences and Hearings

The First Virginia Conference on Local Environmental Management was held in October 1975. It was planned by a Task Force consisting of representatives of five sponsoring State agencies, two sponsoring private agencies, and a member of a local environmental advisory council.

The conference was developed in response to a perceived need to foster the injection of environmental considerations into local planning processes in Virginia through comprehensive, coordinated systems tailored to the needs of the community. The immediate result hoped for, as stated at that time, was that the information presented, the ideas generated, and the resource materials furnished would lead to an interest in environmental planning on the part of local planners (and planning commissioners) and the local elected officials to whom they are responsible. Total registration was 291. Responses by participants indicated an overwhelming desire for a future conference on methodologies for local environmental management in planning, including such environmental planning tools as the natural resource inventory, the local environmental impact review of action alternatives, and effective citizen participation in environmental planning and decision making. Therefore, a follow-up conference is planned for the fall of 1976.

In conjunction with the Council's mandate to hold public hearings, the institution of a "citizens' hour" at each scheduled Council meeting was begun during fiscal year 1975-76. Discussion of any topic pertinent to the Council's area of responsibility is invited at these sessions.

Part II:
Trends and Issues

Prediction of environmental trends is difficult in view of the wide range of forces—energy shortages, transportation problems, economic fluctuations, and population shifts—that will influence and affect Virginia over the next 20 years. Yet it is the long view that is critical to insuring Virginia's future well-being. It is clear that Virginia must maintain a healthy economy to provide new jobs and housing for its citizens; even with serious conservation efforts during the next two decades, demands for resources—energy in particular—will likely be 50% greater than today. It is equally clear that the conservation and wise use of natural resources must be guided by sound environmental values if Virginia is to maintain a high quality of life.

In the next two decades crucial decisions will have to be made on how to make energy, the economy, and environment "work" together without damage to the overall quality of life. Farsighted planning, encompassing the broad picture, will be necessary. The environment will have to be considered in the context of the many competing forces affecting Virginia's future, and ecological facts of life will have to be considered equally with the economic, energy, and social facts of life.

Energy and the environment are inseparably intertwined, and the energy choices of today will significantly affect environmental conditions for decades to come. It is clear now that high energy consumption will become increasingly costly, in terms of environmental damage as well as dollars. Efforts are being made nationally to conserve limited fuel supplies by slowing the growth of energy consumption and by seeking alternative energy sources. The United States is in the early stages of a transition from primary reliance on petroleum to greater use of other energy sources. In the next two decades heavier reliance on coal and nuclear fuels seems necessary.

Conservation, as the Council has noted in previous reports, will be essential if the State is to maintain its high standard of living during the time it takes to make the transition to wider use of alternate energy sources. The Virginia Energy Office has embarked on a study to lay the groundwork for a State energy conservation program that would reduce energy consumption by 5% by 1980.

Expansion of domestic coal production, exploration for new sources of petroleum, and the push to construct large new energy production facilities are raising major environmental questions arising from the side-effects of converting fuel resources into energy supplies. Dealing with the impact of offshore oil and gas development will be one of Virginia's biggest challenges in the next few years.

Virginia will have to consider seriously the use of energy sources that are non-polluting and inexhaustible. Solar energy for space heating is currently available, and its cost is rapidly dropping. A constitutional amendment that would enable tax breaks for solar-equipped facilities in

Virginia was approved for inclusion on the November ballot, and Virginians were expected to give the measure a "yes" vote. The State will likely need to develop the potential of other alternative energy sources—wind, geothermal energy, and solid waste.

Governor Godwin in 1975 appointed an Energy Resources Advisory Commission. This commission has been working to prepare a report, due in December 1976, that will factually assess the international and national realities of energy supply and demand, and specifically describe the energy realities facing the Commonwealth. The Commission has noted that one of the biggest problems with developing a State or national energy policy is bringing public awareness of the hard realities of the energy situation. This report is intended, therefore, to serve as a basic primer for all Virginians who are interested in the facts about energy. Recommendations are also anticipated to the Govenor for his consideration before the 1977 session of the General Assembly.

Given trends in fuel supply, energy conservation, traffic patterns, and urban development, some alteration in the transportation habits of Americans is likely in the future. There has already been a rise in use of public transportation systems. Gasoline prices, higher than they have been, may double or triple in the next five years. If this happens, it will have an effect on a society that has built communities (particularly its suburban communities) on the assumption of cheap and plentiful supplies of gasoline. The network of roads and highways and the structure of urban/suburban communities will have to be reexamined in the light of the new energy realities with which we are faced in the next two decades.

The emerging role of the states in the federal system will also be a factor in the years to come. It is not clear yet just how the federal/state relationship will evolve, but the federal government is showing a greater interest in giving states the primary responsibility to carry out national programs. At the same time, states are expressing a desire to take on these responsibilities. The result of this opportunity will depend in large measure on the willingness of states to do the job, and on the commitment of the federal government to providing the financial resources to do it well.

There is an overall trend toward wider recognition of environmental controls as necessary for a "good life." Citizen concern about the environment is being expressed through greater participation in public processes and increased willingness to volunteer time and talents for environmental projects. This development may be due to post-World War II educational achievements, which have helped create a citizenry both more aware of and more interested in its government. At the same time, the "environmental movement" has matured and environmentalists have come to a realization that "we are all in this together."

Virginia's philosophy of government is based on faith in the private sector and the capability of local government. Localities have been given an opportunity through enabling legislation to take part in the development of sound local environmental management programs. This basic relationship between the State and local governments is likely to remain unchanged, but the State will be forced to accept the responsibility for environmental planning if the localities fail to do the job.

The efforts of Virginia's environmental agencies in the first half of the 1970's were concentrated on problem identification and regulatory programs, and progress was made in cleaning up the State's air and

water. Now the focus is shifting to a more forward-thinking planning approach that emphasizes assessing the consequences of alternative choices before they are made. Localities are working on comprehensive land use plans, water quality planning efforts are well underway, and steps have been taken to begin development of water resource management plans. In order for these efforts to be effective, Virginia must concentrate on *better* planning, not just more planning. Land, air, and water plans, for example, must be tied together to give a realistic view of Virginia's resource management choices. The State will need to develop a clearly understood environmental policy and to encourage localities to do a better job of land use planning that respects the natural resource base and the interdependency of economic, energy, and environmental goals.

Land Resources

Land Use Planning

If there is one significant environmental trend identifiable in Virginia, it is the growing recognition of careful and thoughtful land use planning as the primary tool for maintaining a high quality of life. Land use planning will be a priority in the years ahead; however, emphasis on such work will focus on the development of a mutually supportive relationship between the rights of the individual and the public interest.

Key Facilities Siting. One area of land use in which an expression of State interest is clearly justified involves siting decisions for Key Facilities. Key Facilities include developments vital to the national or State interest, developments required to service or support a facility vital to the national or State interest, and public facilities which represent a major investment of public funds. Examples are power generating and transmission facilities, bulk transmission facilities, major airports, major port and docking facilities, solid waste and hazardous materials disposal and recovery facilities, facilities related to energy resource recovery operations, waterway impoundment or diversion projects, major federal and State governmental facilities, and major highways.

In a December 1975 report, *Siting of Key Facilities*, the Land Use Council found that there currently does not exist a well-defined comprehensive process within State government whereby the interests of its citizens as a whole can be expressed in siting decisions involving Key Facilities. It recommended that the State improve existing law and practices to create such a process. Two approaches to expressing public interest in siting decisions were identified—planning and reactive—and it was concluded that they are interdependent. To achieve the goals of more efficient utilization and management of land resources, specific State action in two areas was recommended: (1) the existing planning approach should be expanded to include long range planning for all categories of Key Facilities, and (2) the environmental impact statement process should be further expanded to include a procedure for the review and coordination of all Key Facilities.

The growing interest in Key Facilities site planning is evidenced in the number of bills on the subject introduced in the 1976 General Assembly. A package of five bills incorporating some of the Land Use Council's specific recommendations was carried over to 1977.

The bills would require environmental impact statements on Key Facilities (including state highways and certain dam proposals) to be coordinated with a unified permit procedure carried out by the Council on the Environment, would require the Division of State Planning and Community Affairs to coordinate site planning for Key Facilities, and would expand the environmental review process for State projects to related land acquisition and to the projects of special-purpose authorities. Other legislation, also carried over, would require General Assembly approval of nuclear plants.

The 1976 General Assembly abolished the Division of State Planning and Community Affairs and, in so doing, expressed its lack of interest in centralized State-level "master planning". This action was consistent with the 1975 law mandating comprehensive plans to be developed by all localities by 1980.

Developments of Greater than Local Significance. There has been an increasing number of instances in recent years in which land use or environmental regulatory (police power) decisions have received attention from a more widespread area than the political jurisdiction in which the development is proposed. These developments range from industrial plants to amusement parks to second-home subdivisions. Decisions on these projects, which may collectively be called Developments of Greater than Local Significance, are often all the more complex because they are proposed for location in relatively undeveloped localities which may suddenly be faced with a need for a high degree of technical expertise in order to judge the merits of the development.

The effects a development may have on the land use, growth patterns, and socioeconomic conditions of a neighboring jurisdiction currently go unaddressed even though the instances and scale of such impacts are increasing. There is no provision in current law and practice to ensure that potential extra-local impacts are considered in the land use decisions made on development proposals.

The question of how to deal with large-scale developments whose impacts transcend local political boundaries is one which brings into play both the powers delegated to local government and the appropriate role of State government in land use planning. Reassessments are being made of the proper nature and extent of the role of State and local government in land use decisions.

The Land Use Council, having identified Developments of Greater than Local Significance as an issue of high priority, is working on a report which will include a set of recommendations to establish an institutional framework and procedure for ensuring that all citizens will have input into the decision-making process.

Recommendations. It is the proper responsibility of State government to protect the interests of its citizens by assuring careful management of land resources. Local-option planning, as it is now practiced in Virginia, does not offer a look at the "big picture." It is up to the State to provide leadership to create a way that the State could express its interest in major siting decisions without abrogating the powers presently delegated to localities.

- The General Assembly should enact in 1977 legislation incorporating the recommendations of the Land Use Council's

report on siting of Key Facilities, except for the requirement for centralized coordination of the planning for such facilities.

- Virginia should develop a review process that will effectively assure consideration of the extra-local impacts of large-scale developmentents.

Soil Survey and Geologic Mapping

In 1972, the General Assembly declared its policy to accelerate the inventory of Virginia's soil resources, setting a goal of 1990 for completion of the survey. Since the General Assembly began funding the program in 1973, the mapping rate has increased from 448,000 acres to over 650,000 acres per year. At the current level of progress, the statewide soil survey would be completed by the year 2000. About 60% of the State is without current soils information. Soil information is needed at the earliest possible date to back local tax programs under the State's Land Assessment Law and to enable localities to complete comprehensive plans required by 1980. The Virginia Soil and Water Conservation Commission estimates that a 40% increase in level of service, involving additional funds of $722,155 and 15 more field soil scientists, is needed.

Only 10% of Virginia's 40,000 square miles are covered by modern geologic maps on a scale of 1:124,000. At present rate of production, mapping the remaining 90% will involve outlay of about $20 million spread over 95 years. These maps will facilitate environmental planning and implementation of land use practices, and produce essential information on coal deposits in Southwest Virginia, a key to meeting increased energy demands. The Department of Conservation and Economic Development proposes that the geologic mapping, with enlarged staff and federal co-operative funding, be completed in 35 years at an annual cost of $450,000-State and $138,000-federal.

Although remote sensing methods are still experimental, data gathered from high-altitude photographs, infrared techniques, and satellite observation have a considerable potential for use in soil and geologic mapping. Landsat data, derived from a multispectral scanner mounted on a satellite platform, has evidenced great promise in the areas of agriculture, mineral exploration, water resource management, land use, coastal zone monitoring, and mapping. Remotely-sensed data has already been used by the Soil and Water Conservation Commission for certain special soil survey projects. Use of remotely-sensed data to the full extent possible could facilitate the necessary task of completing soil and geologic maps of Virginia.

Recommendations. To provide planners and decision-makers with a necessary tool for detailed land use planning, additional financial resources are needed to accelerate the inventory of Virginia's soil resources and the completion of geologic maps.

- It is important that additional funding be provided during 1978-80 to increase field mapping capability and laboratory support, so the State's soil survey can be completed by 1990.
- At the same time, full use of remotely-sensed data, as far its application to soil and geologic mapping extends, should be made.

Agricultural Lands

Virginia currently has approximately 4.5 million acres of land devoted to crops and pasture, and agricultural production in the State meets about 50% of the demand for food. The decline in the number of farmers in Virginia has stabilized, and farm productivity and income is increasing.

If the ratio of production to consumption is maintained, however, another million to million and a half acres will be needed by the year 2000 to feed Virginia's population. The State continues to lose about 100,000 acres of farmland a year to urban development and other land uses. If this present trend continues without change, there may not be enough prime agricultural crop land on which to grow foodstuffs in the future. On the other hand, new agricultural technology will tend to increase productivity, which—if the trend of the last two decades continues—may ameliorate any losses in total acreage.

Although Virginians are concerned about loss of farmlands in the State, and the Department of Agriculture and Commerce is developing programs to promote preservation of prime agricultural lands and to encourage all types of farmers to continue farming, considerably more analysis and discussion of the various economic, financial, social, and environmental advantages and disadvantages of preserving prime agricultural land must be done. The problem is a complex one warranting serious broad-gauged study if a solution that is in the best interests of the citizens of the Commonwealth is to be found.

In the meanwhile, consideration of agricultural lands in the planning process at the local level, and by State government, would help maintain a favorable balance of farmlands in Virginia's communities. Tax incentives, State-supported low-interest loans, and other devices are being suggested as ways to help the farmer—still a basic part of Virginia society—resist pressures to leave agriculture.

The idea of agricultural districts has been under consideration for several years. A two-year study on the need to preserve prime agricultural soils carried out by the Virginia Advisory Legislative Council resulted in the introduction of recommended legislation in the 1976 General Assembly. The bill, called The Agricultural and Forestal Districts Act, was modeled after the New York Agricultural District Law, which provides incentives for the preservation of agricultural lands. The legislation, carried over to 1977, provides for the establishment of agricultural and forestal districts to be created by local governing bodies at the recommendation of the planning commission and an Agricultural and Forestal Advisory Committee.

Recommendations. The value of agricultural lands for productive farms must be given adequate consideration in the planning process at both State and local levels.

- Incentives for farmers to remain in agriculture should be encouraged.

Parks/Open Spaces

Virginia Outdoors Plan. Implementation of the Virginia Outdoors Plan is now far behind the original timetable. Acquisition and development of State parks, in particular, have been severely delayed. Several

new State parks have been created under the plan, but inadequate funding has caused it to fall short of its goal of 36 new parks, one within an hour's drive of every Virginian. Because land prices are rising rapidly and encroachment on proposed park sites imperils their use as public outdoor recreational areas, the chance to acquire these park lands may soon be lost.

An attempt to fund the Virginia Outdoors Plan through an $84 million bond issue failed to pass the General Assembly for the third time in 1976. The Commission of Outdoor Recreation's request for capital budget funds of $15.6 million, which would have attracted another $5 million in federal funds, was also rejected by the 1976 General Assembly.

Scenic Roads/Rivers. Local interest in Scenic River and Scenic Roads programs continues to grow. The State got its second "Virginia Byway" in late summer of 1975 when the 50-mile segment of Route 5 between Richmond and Williamsburg was designated. The State Commission of Highways and Transportation was also expected to designate as Virginia Byways segments of four other roadways recommended by the Commission of Outdoor Recreation. Several other roadways were being evaluated to see if they qualified for State designation.

The Goose Creek Scenic River Bill was passed by the 1976 General Assembly, making that Loudoun County stream the State's second scenic river to be designated without a requirement for later reenactment.

A Statewide Scenic River Advisory Panel was established and segments of the Rivanna and Goose Creek were designated as the first components of the Virginia Scenic River System. Several localities currently are undertaking scenic river studies of their own under the Commission of Outdoor Recreation's "New Approach to Scenic Rivers" program. Under this concept, much of the field work and information gathering is done by local groups using the Commission of Outdoor Recreation's guidelines.

Local Park Plans. The Commission of Outdoor Recreation's grant program to local and regional agencies to help them with their park and open space plans continues to be the catalyst needed to promote more active and effective park programs. Not only is the Commission of Outdoor Recreation now receiving more requests for assistance, but the requests are for a higher quality outdoor recreation facility than in the early years of the program.

Local park acquisitions will continue to be assisted, though at a lower level, through expenditure of $3 million in matching federal funds authorized by the 1976 General Assembly for this purpose.

Federal Lands. Virginia has large areas of federally owned land, including National Forests, National Parks, National Wildlife Refuges, and military installations. The federal government is the largest single landowner in Virginia. These federal lands have a direct impact on adjacent State lands, and on air, water, and wildlife throughout the State.

The Commission of Outdoor Recreation has assisted a number of localities in their successful efforts to obtain surplus federal property for park and open space purposes. More than 2,700 acres of federal land were transferred this past year to localities for recreational use.

Recommendations. Provision for adequate open space, from highly developed urban parks and greenbelts to undeveloped wilderness areas, is essential for the well-being of our citizens, for a high quality of life, and for the valuable tourist trade. It is imperative that acceptable financing be found to achieve the Virginia Outdoors Plan's goals of taking pressure off existing overcrowded parks, providing sufficient outdoor recreation for all citizens, and preserving Virginia's outdoor heritage for future generations.

- The State should institute an agressive program of land acquisition for new State parks and focus on implementing several other provisions of the Virginia Outdoors Plan, including providing visitor facilities on lands already acquired for State park purposes; acquiring additional lands or easements to protect the Appalachian National Scenic Trail through Virginia; and preserving and protecting areas of special scenic, natural, ecological, geological, floral, faunal, marine or aquatic significance.
- Two new Scenic River proposals—segments of the Catoctin and Appomatox—will be brought before the 1977 General Assembly, and should be supported.
- Virginia residents have a strong interest in protection of federal lands within the State, and the State should make its voice heard when federal agencies propose management plans for these areas. Virginia should continue to speak out for the protection of these often unspoiled areas when they are declared surplus and become available for park development.

Historic Landmarks

In 1966, the Virginia Historic Landmarks Commission was established by the General Assembly. Using National Park Service grants, it has distributed over $1.25 million to restoration projects over the past six years. But hundreds of historically and architecturally significant houses, mills, industrial structures, government buildings, and churches are lost each year in Virginia for lack of money. The Virginia Historic Landmarks Commission has requested $8.5 million for 105 preservation efforts in fiscal year 1977, but expects to receive only $500,000.

Virginia, unlike its neighboring states, does not have a State grants program to supplement the National Park Service program. Such a State grants program, which would include maintenance and restoration of properties held under easement, would lessen Virginia's dependence on the federal government and would employ architects, draftsmen, contractors, and craftsmen in a period of high unemployment in those fields. The recycling of older structures is an obvious step toward achieving the goal of preserving Virginia's cultural heritage, and takes advantage of the lower costs of adaptive use.

The Virginia Historic Landmarks Commission holds historic easements on parcels of land representing thousands of acres. But because of limited funding, yearly inspection of these sites must be accomplished by an already overworked staff.

The Virginia Archeological and Historic Building Inventory, now numbering some 16,000 "raw data" entries, reflects Virginia's remark-

able cultural resource—a resource unmatched by any other state. But because current files represent only about 40% of the completed survey, the Virginia Historic Landmarks Commission may unwittingly approve destruction of significant sites and structures through the A-95 review or environmental impact statement process. The information presently maintained is sufficient for the environmental review process, but is not adequate to communicate the value of a site to a layman or city planner.

Recommendations. The State should support the Virginia Historic Landmarks Commission with adequate appropriations to ensure preservation of Virginia's historic and natural landmarks.

- Two qualified architectural surveyors should be hired to complete the statewide Virginia Archeological and Historic Building Inventory over a 5-year period, and an archivist trained in architectural history should be added to properly interpret the photographs and profiles now contained in the "raw data" inventory.

Surface Mining

In 1966, the General Assembly acted to require reclamation of lands disturbed by surface mining of coal. The regulatory program, supported by appropriations from the general fund and special revenues from permit fees, has never been funded adequately. The problem has become more intense as mining activity has increased and more stringent requirements on mining operations have been imposed. Coal production from surface mines in Virginia has increased from 5.8 million tons in 1966 to 11.6 million tons in 1975. This increase in mining activity has led to a more complex regulatory program, with a greater number of bond forefeitures and more litigation. 1972 legislation tightening the law controlling coal surface mining and giving the Department of Conservation and Economic Development power to issue rules and regulations has provided a good regulatory framework, but has also added to the Department's workload.

The need for additional funds to take care of the increased administrative activity was recognized by the Virginia Advisory Legislative Council in a 1974 report to the General Assembly. The workload for inspectors is now 53 operations per inspector, and it is estimated that 21 additional staff members—at a cost of $369,000 a year—will be needed to administer the program adequately.

Legislation (SB 347) to provide additional funds through an increase in permit fees was carried over from the 1976 General Assembly. This bill also would provide funds to reclaim "orphaned lands" in Buchanan County. The reclamation program for strip-mined "orphaned lands" in Southwest Virginia is funded only with federal monies through a Tennessee Valley Authority grant, but the program excludes Buchanan County because it is not in the Tennesse River watershed.

Reclamation of lands disturbed by surface mining of minerals other than coal is also an area requiring General Assembly action in 1977. Reclamation of these areas has been required since 1968, but the program has not been funded adequately from the beginning. In addition, the basic law should be strengthened to clarify certain procedural questions

and give rule-making authority to the Department of Conservation and Economic Development. Legislation to accomplish these ends (HB 987) was recommended by the Virginia Advisory Legislative Council, but was carried over by the 1976 General Assembly.

Another issue that has arisen recently is the question of surface mining on public lands in Virginia. Such operations have been proceeding on land owned by a community college in Southwest Virginia, and there have been inquiries to the Jefferson National Forest concerning some privately owned mineral rights.

Cooperation by the State Water Control Board, Department of Conservation and Economic Development, and federal agencies has made a good start in controlling potential problems of non-point source pollution from mining operations. Coordination of non-point source measures by a single agency would obviate the need for mine operators to deal with several permitting authorities.

Recommendations. Stripping land to obtain coal and other minerals not only disfigures the land, but creates potential for erosion and non-point source pollution by acid and heavy metals. Virginia has initiated reclamation efforts to erase the scars of strip-mining, but the programs are underfunded and, in the case of mining for minerals other than coal, are too weak.

- The State must provide adequate funding to administer reclamation programs, strengthen its commitment, and put a high priority on seeking new solutions to the problems of reclaiming stripped lands.
- In 1977, the General Assembly should pass HB 987 and SB 347 to provide additional funds for reclamation programs by increasing permit fees.
- Surface mining on public lands in Virginia should be discouraged by the State, in accordance with its purpose of maintaining lands in public trust.

Air Resources

Virginia has shown a very significant trend downward in air pollutant levels since 1969, particularly in the area of total suspended particulates, where—along with sulfur dioxide—most of the State Air Pollution Control Board's efforts were concentrated. There are now only two areas in the State—one in Tidewater and the other near Roanoke—that have not achieved National Ambient Air Quality Standards for total suspended particulates, but both of these areas are showing downward trends.

Although no regions of the State have exceeded the annual average standards, there were two instances when the 24-hour sample of sulfur dioxide exceeded the national standards. Ozone, which is being monitored in several regions, shows an upward trend both in metropolitan and rural areas of the State—a trend that exists nationwide. It appears that EPA will recommend new congressional legislation to protect the ozone layer by banning substances that would contribute to its further destruction. Monitoring of carbon monoxide has been undertaken on a limited scale, and Northern Virginia is the only place where there has

been a significant number of days where the eight-hour primary standards were violated.

The enforcement area is taking its turn as the agency gradually finishes its statewide inventory of air pollution sources. The State Air Pollution Control Board (SAPCB) has located and registered all of the potential sources of air pollution and either made sure they had air pollution control devices installed or were put on programs to get them installed. There is now a more sophisticated engineering effort moving to the forefront. As the policeman task abates and the large inventory of potential pollution sources is examined, it has become obvious that a computer-based air quality data base and simulation modeling capability is needed to provide a basis for air quality planning.

The complexity of air quality planning requires computer simulation of air quality trends. Computer simulation is the only acceptable method of projecting air quality to satisfy the requirements of the Environmental Protection Agency's (EPA) transportation control plan requirements, the provision of State law calling for master plans in all communities, and environmental impact evaluations of large facilities such as refineries, highways, and chemical plants.

In addition, the SAPCB will need to expand the monitoring network into the remote areas of the State where monitoring stations have not previously existed or where there is no data base on existing or previous air quality. Under EPA's "no significant deterioration" regulation, the power to designate the air quality category for regions of a state is reserved to EPA, with the states merely supplying data and requesting changes. All regions of a state are initially given middle designation and the state must prove to EPA that the designation should be altered. Since the air quality designation of regions may be a controlling factor in future industrial growth, Virginia's ability to justify designation changes may become a problem in the future. Without background data, the State would have no basis for requesting changes. Construction of new facilities could be delayed up to two years while the necessary data was gathered. To prove that a facility could be built without exceeding Ambient Air Quality Standards, the SAPCB would need monitoring data and a computer simulation effort—areas where the capability of the State is presently very limited.

As the program to achieve clean air progresses and the increments of progress become smaller, the costs become higher. It will be necessary to use engineers in the field enforcement part of the program to cope with the more complicated air pollution control devices and the environmental engineers that are becoming standard staff members at all major sources of air pollution. Computer support will be needed, along with extensive, more expensive training programs for staff members.

More sophisticated staff requirements can be expected at all levels at the SAPCB in the future. Program costs can be expected to rise in light of decreasing federal support, requirements to meet new standards, and requirements to continue maintenance of National Ambient Air Quality Standards.

SB 543, passed by the 1976 General Assembly, authorized civil penalities up to $10,000 per day against persons violating or failing to comply with SAPCB regulations. The State Air Pollution Laws now have real teeth in them, and the measure is expected to aid enforcement against owners who could afford the previous small penalties for violations.

The decision of Virginia to challenge the EPA's imposition of a transportation control plan on Northern Virginia may have nationwide implications. The D.C. Court of Appeals ruled in favor of Virginia, and the case is now being brought before the U.S. Supreme Court. In the balance hangs the federal government's authority to require states and localities to enforce regulations it prescribes. The oxidant program may be challenged on more fronts as its cost becomes apparent, and other programs will be challenged at state and national levels.

The SAPCB's approval in October 1975 of a permit request by the Hampton Roads Energy Company to build a petrochemical complex in Portsmouth raised questions about construction of new facilities when ambient air quality standards are not being met. Because of high oxidant levels in Tidewater, the EPA declared the refinery project "environmentally unacceptable"—even though the facility would meet new source standards. Later, the EPA promised to rescind its "environmentally unacceptable" designation if Virginia would take steps to control hydrocarbons in Tidewater. The issue is still unresolved, although the SAPCB is working on a proposed regulation to require floating roofs on large storage tanks for volatile organic materials. That proposed requirement is expected to go to public hearing in the late fall of 1976.

The fate of Virginia's regulation requiring permits for "indirect sources" of air pollution will be decided in the next year. The SAPCB is continuing to review potential "indirect source" developments to see if a permit is required. About a dozen permits have been issued since the regulation went into effect two years ago. The EPA, however, has backed away from enforcement of indirect sources requirements since Congress has indicated disapproval of parking controls. The International council

of Shopping Centers later asked Virginia to rescind its indirect sources rule. The SAPCB took no action on the request when it considered the matter in April 1976, but is expected to make a decision soon.

Recommendation. The State Air Pollution Control Board should receive increased appropriations in the next biennium to take care of rising program costs and to provide for the necessary additional professional staff and computer simulation capability.

Water Resources

Water Resources Management

Water resources management, identified by the Council as a major concern since 1971, is a complex issue fundamental to Virginia's well-being. The problem is one of increasing demands for fixed resources. Private and corporate citizens require more water than ever before, while the importance of water to agriculture, recreation, and overall environmental quality is taking on added significance. Technologies related to electric power production demand vast quantities of water, and will put an increasing burden on water resources.

Serious water supply shortages are predicted in the near future in Northern and Southeastern Virginia, areas representing about one-half the State's population, and uncertainty about future water supplies exists in nearly one-third of Virginia's jurisdictions.

The increased demand on water supply by population and industrial growth and the need to protect the health, safety, and economic welfare of Virginia citizens led the General Assembly to recognize the need for water resources planning in 1966. In 1972, the General Assembly merged the Division of Water Resources into the State Water Control Board (SWCB), making it the key policy and planning agency for water resources. The establishment of a management procedure for groundwater, which is interdependent with surface water, was initiated by the 1973 General Assembly.

In addition to the SWCB, many other State agencies* are involved in different aspects of water resource management, including coastal resource management, water pollution, drinking water safety, soil erosion and sedimentation control, flood control, and marine management. Other less directly involved areas, such as recreation (scenic rivers) and energy (nuclear power plant siting), are just as important.

Comprehensive water and related land resources plans for each river basin in the State are required by State and federal law. These plans could provide a statewide water resources management plan in harmony and conjunction with land use, but completion of these plans has been de-

* Coastal Resources Management Program, State Soil and Water Conservation Commission, Virginia Marine Resources Commission, Department of Conservation and Economic Development, State Health Department, Virginia Institute of Marine Science, Commission on Outdoor Recreation, State Corporation Commission, etc.

layed. There is currently no mechanism for plan implementation, even though one basin plan is complete (New River Basin) and one underway (James Basin). Depending on the size of the basin, data available, and complexity of the problem, a comprehensive plan could require about $500,000 to $1,000,000 to complete during an 18- to 24-month time period and a manpower commitment of from 10 to 20 man-years. To complete the remaining seven basin plans by 1980 would require that two plans per year be completed beginning in 1976-77. This is possible only if fiscal resources and manpower are available.

Virginia is not a "water short" state, but its people and industry are not located in the areas where there is an abundant supply of water, i.e., Upper James River or Roanoke Basin. Current shortages projected for growth areas of the State seem to demand a resolution of the problem. Interbasin transfer is an obvious choice, but because it represents an allocation of a basic resource from one section of the State to another, it is a controversial question with economic, environmental, legal, and political complications. The doctrine of riparian rights, the common law concerning water allocation presently in force in Virginia, does not facilitate the large-scale intrastate transfer of water.

Recommendations. It is imperative that water—a vital and basic resource—be managed to insure its use and enjoyment by all citizens of Virginia. The State, which must be responsible for such management, needs to increase its ability to plan for and deal with water resources problems. Strong leadership and a strong commitment over the next few years are essential to get the job done.

At a time when economic policy and public pressures necessitate early decisions to alleviate projected water shortages, it is important that Virginia be guided by direct legislative intent regarding implicit use of this vital resource. Without overthrowing the riparian doctrine, Virginia should seek adoption of laws and policies fully adjusted to the present situation.

- A joint legislative commission, including gubernatorial appointees, should study and make recommendations with regard to: (1) the extent which present laws, doctrines, and policies, including the riparian doctrine, and its general prohibitions of transbasin diversion, may facilitate and/or frustrate the implementation of a statewide water resources management plan; (2) additional legislation needed; (3) institutional arrangements, including needed legislation here; and (4) procedures for financing.
- A mechanism to insure careful scrutiny of proposed interbasin transfer projects must be initiated. The environmental review process currently established for certain categories of projects costing over $100,000, as set forth in § 10-17.107 through § 10-17.112 of the Code of Virginia, would be suitable.
- The State Water Control Board should give top priority to completing full-scale water and land resources plans for each of the State's river basins as soon as possible, tapping every available federal and state financial and manpower resource to get the job done.
- The various State agencies involved in aspects of water resource management must improve their co-ordination to work together toward a common goal.

Water Quality

High water quality and absence of significant pollution problems reflect a long-standing and aggressive water pollution control program in Virginia. Despite continued population and industrial growth, total pounds of pollutants from municipalities, including their connected industrial load, have declined constantly for the past few years.

Almost all Virginia communities have sewage treatment and most have secondary or higher levels of treatment. Phosphate removal has been obtained at six existing plants through the use of "interim" chemical addition systems resulting in a reduction in phosphorous discharge of 5,000-6,000 pounds. All industrial plants have, under Virginia's permit system, installed wastewater facilities and most are relatively effective.

Of the total 27,240 miles of streams in Virginia, only 2,288 miles (8.4%) were not meeting water quality standards in 1975. In 1977, this will be reduced to 1,431 miles (5.2%), and by 1983 only 90 miles of stream (0.3%) will not meet the national goal. Pollution problems are, without exception, limited to discrete stream segments, generally not more than a few miles long. Pollution abatement projects under construction by municipalities or called for under the National Pollutant Discharge Elimination System (NPDES) program should eliminate most of these problems within the next five to eight years.

The State Water Control Board's (SWCB) second Water Quality Inventory, published in April 1976, indicates that water quality in Virginia's nine river basins is generally good or improving. However, several parameters—particularly orthophosphates—show worsening trends.

The largest single factor in controlling water pollution in Virginia is the effective treatment of municipal sewage. The SWCB has responsibility for administering State and federal grants to enable communities to construct and/or expand sewerage facilities. In 1975 and 1976 the SWCB appropriated approximately $300 million to Virginia communities for construction of sewerage facilities. Although the SWCB has made significant progress in developing an efficient program for administering construction grants, the program has recently been stalemated by the uncertainty of future federal funding.

In April 1975, the SWCB was granted authority to administer the NPDES program in Virginia. The program requires each municipal and industrial discharger of wastewater into rivers and streams to obtain a permit from the State. As of August 1976, over 1,400 permits had been issued, accounting for 90% of industrial and 95% of municipal pollutants discharged into State waters. A permit tracking program involving monitoring of sewage discharge performance reports, spot sampling of plant discharges, and surveys of treatment plant efficiency allows the SWCB to detect permit violations.

Enforcement actions can range from warnings to legal proceedings, but the SWCB's preferred course of action is to direct the staff to work with plant owners to correct deficiencies. Discharges are allowed to continue while the problem is being solved, which is frequently a necessary condition in order to assure that process changes produce the proper solution. Court action is now likely.

In addition to its permit tracking program, the SWCB maintains a surveillance program including ambient quality monitoring, groundwater monitoring, compliance monitoring, sanitary surveys, pollution complaints, and fish kill investigations.

The HATS (Hazard Alert Team Standby) program was renamed and somewhat expanded on July 1, 1975. The program is now called PReP (Pollution Response Program). PReP teams are on call 24 hours a day, seven days a week, to investigate citizen complaints involving any type of water pollution. The number of complaints—a total of 809 during 1975—is increasing, possibly due to greater public awareness of the SWCB's programs.

During 1975, the SWCB received 322 reports of oil pollution, involving a total spillage of 366,982 gallons. The U.S. Coast Guard, Hampton Roads, received an additional 566 spill reports in Virginia waters. There were 21 hazardous chemical spills during 1975 involving 40,050 pounds and 47,049 gallons of material.

During 1975, there were 168 fish kills reported in Virginia's waters—up from 68 in 1970. Approximately 15% of the fish kills are pollution-related, most of them isolated incidents resulting from one-time spills, accidents, or other mishaps.

Recommendation. In order to preclude widespread noncompliance by major municipal and industrial permit holders, the SWCB should continue an aggressive enforcement posture.

Non-Point Sources of Pollution

Large quantities of pollutants enter Virginia waters without ever flowing through sewers, treatment facilities, or outfall works. These wastes come from non-point sources such as farm, forest, and urban runoff. Runoff from urban areas following rainfalls carries heavy loads of organic, bacterial, and solids materials into State waters. Agricultural runoff is a major source of nutrients, pesticides, and sediments. Forest runoff, too, contributes to the load of nutrients and sediments that can choke Virginia's waterways.

Particularly difficult problems—ones that may require further control efforts—are the pesticides, and other toxic substances often associated with non-point sources. The Opequon Creek Pesticide Study, published by the State Water Control Board (SWCB) in December 1975, revealed contamination by 18 different pesticides—in the Frederick county watershed. The study concluded that pesticide pollution in the creek is widespread and due to non-point sources.

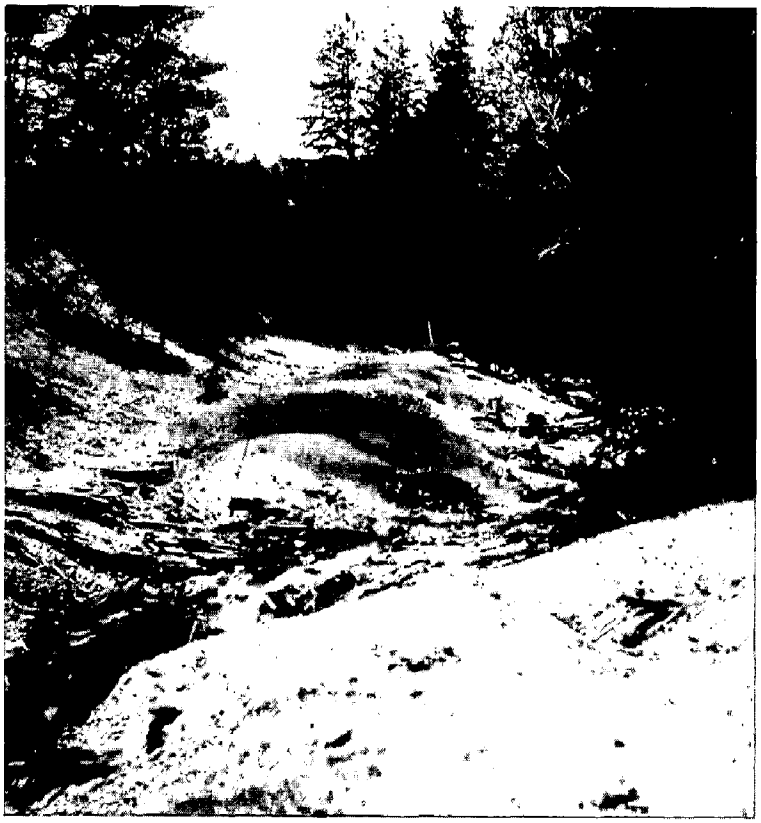
Recognition of the seriousness of non-point source pollution in Virginia has increased, but runoff problems have gone uncontrolled because data has been insufficient to provide a basis for solutions. The "208" planning process is addressing the problem of non-point sources, and the information gained should further define the impact of non-point sources and enable the design of systems to correct the identified problems. Of the State's seven 208 regional wastewater management programs, only one—in the Roanoke area—has completed its draft report, and that report did not indicate a major area-wide problem with non-point sources. As a requirement of Phase II of the 208 process, the SWCB is preparing to undertake an inventory of non-point sources in parts of the State not in a designated 208 area. To facilitate the State's non-point source efforts, Secretary Shiflet has appointed a State Non-Point Sources Coordinating Committee chaired by the director of the State Soil and Water Conservation Commission.

Sediments. With the advent of modern construction techniques and the rapidly expanding population requiring housing and many other facilities, sediment has become a major source of pollution of State waters. Sediments are filling water supply reservoirs at an ever-increasing rate, destroying stream beds as a habitat for aquatic life, and silting up navigational channels. Probably the most important source of sediment is construction activity, but agriculture still contributes a significant quantity of sediments, and silviculture is believed to be another source.

Primary authority for control of soil erosion on agricultural lands has been in the hands of the 42 local Soil and Water Conservation Districts. The 1973 Erosion and Sediment Control Law required all communities in the State to adopt by January 1976 control ordinances acceptable to the State Soil and Water Conservation Commission. Sediment control programs have now been approved for 95% of Virginia's cities and 60% of its towns. The Soil and Water Conservation Commission is working to help the other localities complete their programs.

A number of agencies—the State Water Control Board, the State Highway Department, the Division of State Forestry, and the State Soil and Water Conservation Commission—are involved in various aspects of sediment control. Further cooperation among these agencies would facilitate achievement of the goal of eliminating sediment as a significant source of pollution.

Urban Runoff. Urbanization results in the stripping of vegetation and the proliferation of paved areas. Runoff during rainy periods—laden with organic material and residues containing metals, chemicals, and solids—makes its way directly into receiving waters through storm sew-



ers. Some of Virginia's older communities still have combined storm/sanitary sewer systems that result in periodic discharge of significant amounts of untreated sewage. In some cases, urban runoff may render impotent the water quality progress made through elimination of point sources. The SWCB is working with localities in an attempt to minimize combined sewer problems.

Nutrients. Nutrients such as phosphorous and nitrogen gain access to State waters from sewage treatment plant discharge, runoff from agricultural lands, and urban runoff. The result is over-enrichment—or eutrophication—of standing bodies of water and slow-moving streams. Eutrophication has been noted in the Rivanna River, Lake Chesdin, Occoquan Reservoir, the Peak Creek arm of Claytor Lake, and the upper reaches of Smith Mountain Lake. Algal blooms are aesthetically unappealing and can inhibit the potential of recreation sites, as well as release toxins that can endanger aquatic life and impart tastes and odors to drinking water.

Waste treatment technology cannot be relied on to remove nutrients in every case, since other sources may be dominant in some areas. The best solution appears to be incorporation of point source removal along with other programs involving inter-agency cooperation.

Recommendations. Efforts to provide a sufficient data base on which to determine solutions to problems of non-point source pollution should be given top priority.

- In order to achieve the goal of eliminating non-point source pollution problems, further inter-agency cooperation must be fostered among the various agencies involved in controlling non-point sources.
- The SWCB and the Virginia Department of Agriculture and Commerce should work together to investigate rates of fertilizer application and, when excessive application appears to be a problem, to provide farmers with additional information on reduced fertilizer use.
- The eutrophication potential of Virginia lakes should be studied, and protective nutrient standards should be established.

Coastal and Marine Resources

Coastal Resources Management

Managing the impact of offshore oil and gas development on the Outer Continental Shelf may be one of Virginia's biggest challenges over the next few years. Leasing for offshore drilling sites in the Atlantic has begun, the permit process for a refinery in Hampton Roads has begun, and plans have been drawn for a fabrication plant on the Eastern Shore. Virginia awaits the benefits of Outer Continental Shelf development, but it must be ready for the onshore build-up that will occur when large-scale operations begin.

To protect its interests, Virginia is taking steps to make sure its voice is heard at the federal level as offshore oil development proceeds. The State is represented on the Outer Continental Shelf Environmental Studies Advisory Committee, a Department of Interior committee which

meets quarterly in Washington to provide advice on federally funded Outer Continental Shelf studies. Secretary Shiflet represents Virginia on two policy boards, the Middle Atlantic Governor's Coastal Resources Council and the Outer Continental Shelf Advisory Board. The 1976 General Assembly passed SJR 32, requesting Virginia's Congressional delegation to seek maximum revenues for costs relating to offshore drilling. The Virginia Institute of Marine Science (VIMS) is engaged in a $1.8 million study for the Bureau of Land Management to establish baselines for conditions in the Middle Atlantic Bight prior to development of petroleum resources there.

Outer Continental Shelf development has made completion of an acceptable Coastal Resources Management Program a top priority for the prudent management of Virginia's fragile coastal environment. The 1976 amendments to the federal Coastal Zone Management Act, signed by the President on July 26, 1976, provide for federal funds to assist Outer Continental Shelf-impacted states with planning and onshore facilities construction. This adds a measure of urgency to the development of an approvable program in Virginia.

During fiscal year 1975-76, Virginia's Coastal Resources Management Program was under study by the Commerce and Resources Section of the Division of State Planning and Community Affairs. The program was funded with a grant from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration and Department of Commerce. With the disbanding of the Division on June 30, 1976, the responsibility for coastal resource management was transferred to the Secretary of Commerce and Resources, a move which underscores the importance the Executive branch places on Virginia's coastal resources.

VIMS has accelerated its efforts to provide a data base for shoreline management programs. It is nearing completion of its Tidal Marsh Inventory, which delineates the State's wetlands by type, location, and vegetable composition. Inventories for about two-thirds of the State's wetlands have been published by political jurisdictions. VIMS is also working on Shoreline Situation Reports covering erosion, existing waterfront land use, potential uses, structures present, and shoreline type. In cooperation with localities, VIMS is defining a method for identifying and designating geographic areas of particular concern.

The role of the Virginia Marine Resources Commission includes maintaining federal contacts during the program's development process and studying uses that should be managed within the coastal waters of the State. The Office of Commerce and Resources is directing its work to the definition of coastal area management boundaries, uses of lands which impact coastal waters, procedures for siting Key Facilities, and uses of regional benefit.

These and other planning activities are leading to the preparation of a draft plan, which is intended to be the subject of public and agency review during the latter half of fiscal year 1977.

The effort to develop a sound policy for coastal resources in Virginia is based on the following precepts:

* The coastal zone is an ecologically fragile area which requires careful protective stewardship.
* Increasing and competing demands on coastal lands and waters have depleted and endangered marine and other natural resources.

* Decisions about land and water uses in the coastal zone must be based on national, State, and regional considerations as well as on local interests.

Yet in the two years since the Coastal Resources Management Program has been underway, clearly defined goals have not been established. Many segments of the public are not even aware of the existence of this important effort to develop a policy for the preservation and protection of coastal zone resources. The Coastal Resources Management Program is a complex intellectual exercise that will require hard thinking in order to accommodate the diverse interests in the coastal zone. Development of a clear purpose, policy, and strategy is vital now that the impending impact of offshore oil development has created a new urgency to complete an approvable program.

Recommendation. In order to preserve and protect resources of the coastal zone for the enjoyment of succeeding generations of Virginians, a basic State policy on coastal resources management must be clearly enunciated and a specific plan for implementing it must be developed. The Council hopes this will be accomplished in the remaining year of the Coastal Resources Management Program planning process.

Wetlands

An aggressive wetlands program at the local level is continuing to reduce the amount of marsh destroyed each year by man's activities. Prior to passage of the Wetlands Act in 1972, the rate of marsh loss had reached 450 acres per year and was rising rapidly. Since then, that trend has been sharply reversed. The amount of wetlands lost is now decreasing, and the number of applications to alter marshes has dropped. An increased awareness of the need to preserve Virginia's valuable wetlands resource is revealed in the increased number of requests for technical advice prior to making application.

Shoreline Erosion

Shoreline erosion is a continuous problem along Virginia's coast. Development is encroaching closer to the shoreline, and erosion rates are increasing in some areas. Erosion from wave action causes destruction of property and leads to the disappearance of natural beaches and wildlife habitats. Attempts at shore protection with rip-rap, groins (jetties), and bulkheads have often been unsuccessful.

The Virginia Institute of Marine Science has been studying new solutions to the problem of shoreline erosion. It has had success with inexpensive sills of sand-filled nylon bags placed parallel to the shore no more than 50 feet from mean high water.

Recommendation. Research into the best systems and construction design for control of shoreline erosion should be continued to ensure protection of private property and perpetuation of normal shore processes.

Fisheries

Virginia's fishery resources have been placed under stress in the last few years by domestic and foreign overfishing, closure of major fishing grounds due to chemical pollution, past destruction of prime breeding areas (wetlands), possible long term climatic changes, and a variety of other reasons. The total catch for Virginia in 1975 was 444.8 million pounds having a dockside value of $33.1 million, a decline from 1974 of 16.1% in poundage and 7.3% in value. The 1976 catch for most of the commercially important species of finfish is forecast at below twenty year averages. The long range forecast for those species of finfish breeding near or in coastal waters is not optimistic, but this situation could be favorably altered by positive conservation and management steps, some of which are already underway.

Some overfishing pressure will be relieved on offshore species with the implementation of the U.S.-controlled 200-mile fishing zone established by the 1976 Fishery Conservation and Management Act. The extended jurisdiction becomes effective in March 1977, and the recovery period for overfished species is estimated at from four to twelve years. The full impact of the new fishing zone on fisheries management in Virginia has not yet been determined. Regional councils are charged with developing fishery management plans based on national standards. Virginia is represented on the Mid-Atlantic Regional Fishery Management Council, which is just beginning to function.

The outcome of the *Douglas v. Seacoast* case currently before the U.S. Supreme Court may affect the overall management of migratory species and lead to a totally different manner of interfacing with federal law enforcement activities. At stake is the matter of federal or State primary jurisdiction over migratory species, and the question of excluding non-residents from Virginia waters. An adverse decision in the case could dictate extensive review and changes to Virginia's fisheries laws and policies.

Budgetary restrictions on the Virginia Marine Resources Commission (VMRC) and its replenishment program have curtailed the large-scale rebuilding of the State's public oyster beds from the effects of Tropical Storm Agnes and the oyster predator MSX. Refined management techniques for molluscan species may aid in increasing populations and harvest, provided further degradation of water quality is halted.

Redefining natural oyster rocks, beds, and shoals (Baylor Survey) would identify those areas unlikely to be productive naturally or to receive VMRC attention due to limited funds. Such areas deemed expendable might be removed from Baylor Survey and made available for private leasing, thus bringing private capital into play where public funds have been insufficient.

Restructuring the general oyster planting ground lease would maximize general fund revenues and preclude the practice of protective leasing, encouraging the migration of leases into their highest economic use. Restructuring the lease is critical if Baylor Survey is to be redefined.

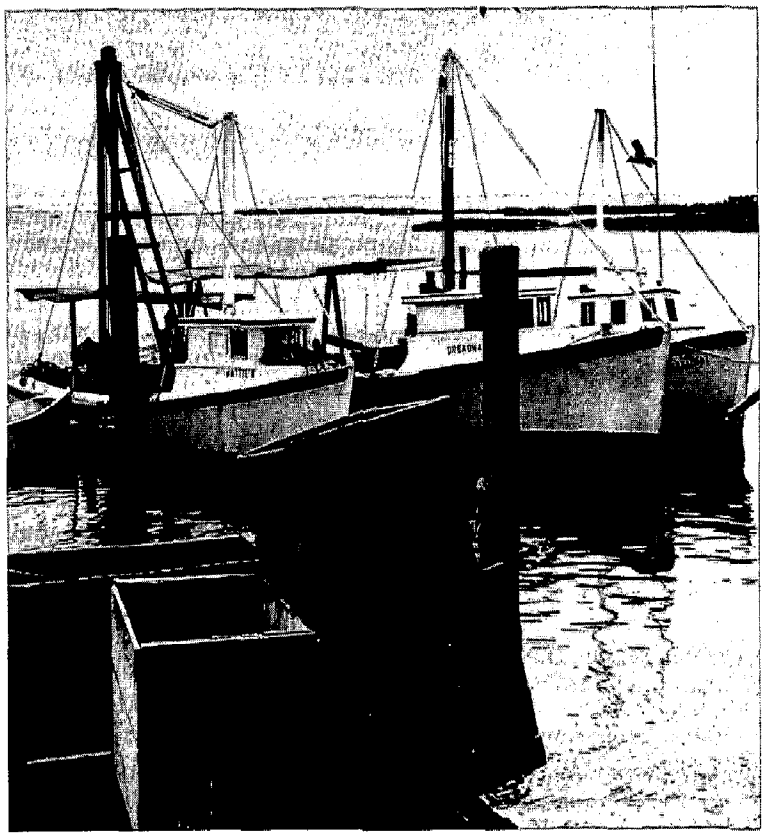
Shellfish vs. Development. The influx of people to previously sparsely settled rural areas immediately increases the demand for more housing, roads, community services, and recreational activities, all of which may adversely affect the environment. For this reason, the forces of development and the shellfish industry—which depends on a high

quality, unpolluted environment—are on a collision course. Conflicts arising out of this dilemna cut across agency lines and involve the criteria for oyster ground condemnation, the responsibility for pollution abatement, and the toxic effect of chlorine disinfectant in wastewater treatment facilities.

In order to prevent the harvesting of shellfish from areas that might be subjected to hazardous substances of human or animal origin, "buffer zones" are established routinely around all sewage treatment plant outfalls, industrial wastes, or animal discharges. Invariably buffer zones established around such outfalls are lost forever to the shellfish industry. As more and more discharges occur, the buffer zones soon begin to overlap and entire estuaries are lost to shellfish production. Shellfish grounds are also condemned in waters surrounding marinas where boats without holding tanks are moored. Non-point sources of pollution, too, are having a significant detrimental effect on water quality in shellfish areas.

Insufficient personnel are hampering efforts to complete shoreline surveys around shellfish areas, and the demands of an expanding population prevent local health department sanitarians from correcting sources of pollution as soon as they are discovered. When water samples indicate unsatisfactory conditions, the only alternative is to close areas receiving such pollution to shellfish harvesting.

Frequently, even the total elimination of all pollution sources to an estuary does not result in water quality improvement to the extent the area can be approved. It is often difficult to convince the Food and Drug Administration that a shellfish growing area is properly classified when



the bacterial concentration is unsatisfactory, even though there is no evident pollution.

The standard of water quality presently used by the National Shellfish Sanitation Program is the coliform group of bacteria. Experience has proven this standard to be adequately protective of human health, but it has been criticized as being over-protective of shellfish areas. Because the coliform group does not differentiate between human, animal, or other types of pollution, efforts are currently being undertaken to switch to the more definitive fecal coliform standard for the classification of shellfish growing areas.

Recommendations. Virginia has a vital interest in protecting its fisheries resources, both shellfish and finfish. Fisheries represent a renewable, manageable natural resource of significant economic value to many coastal communities, and they should be managed as carefully as other natural resources such as forests, water, and agricultural lands. Shellfish culture in particular, must be recognized as a beneficial use of estuarine waters to be considered in comprehensive land use and pollution abatement programs.

- The General Assembly should act to redefine Baylor Survey oyster beds, and the general oyster planting ground lease should be restructured accordingly.
- An in-depth study on the effects of development on the shellfish industry should be conducted, and the General Assembly should delineate the State's position on exercising control over development in shellfish growing areas.

Toxic Substances

Perhaps the single most noteworthy environmental "event" of the year in Virginia was massive contamination by the pesticide Kepone. The Kepone tragedy focused Virginia's attention on the seriousness of the toxic substances problem and brought home with sudden urgency the need to know more about chemicals in our environment and to develop adequate means of preventing future ecological disasters.

Synthetic chemicals—plastics, pesticides, new fibers—have proliferated in the last 40 years, revolutionizing American life. The value of these substances has long been established, but it was only recently that awareness of the potential dangers of these and other widespread substances dawned. The harmful effects of materials like vinyl chloride, asbestos, heavy metals, and flourocarbons—once thought to be innocuous—are now well-recognized. Of the 3.5 million known chemicals, only a few are highly toxic, so we have been lulled into a false sense of security. Hundreds of new compounds are being introduced into commerce each year, before their potential for harm has been fully assessed and even as chemicals already in wide use are discovered to have toxic effect.

Kepone

In Virginia, the Kepone story began in July 1975 when a State Health Department inspection of Life Science Products, Inc., in Hope-

well, uncovered Kepone contamination of the air, ground, and buildings at the plant. Two days later, the facility agreed to shut its doors, and the State began a major long-term effort to survey the extent of the environmental contamination that had occurred and to seek ways to correct it. The investigation and clean-up program has cut broadly across agency lines, involving some twelve different State agencies and costing an estimated $632,525.

An inter-agency Kepone Task Force was established in early December 1975 to coordinate all activities related to Kepone. In mid-December, studies by the Environmental Protection Agency and the State Water Control Board presented evidence of detectable levels of Kepone in finfish, shellfish, soil, sediment, and water samples from the James River area. On December 18, 1975, Governor Godwin ordered the entire James River—from the fall line at Richmond to its mouth—closed to the taking of shellfish and finfish until the extent and effects of Kepone contamination could be determined more clearly.

The Marine Subcommittee of the Kepone Task Force is working to determine the full impact of Kepone on aquatic life in the contaminated area. The discovery that Kepone could be shown in Chesapeake Bay fish prompted more intensive sampling efforts in the bay and an extensive program of monitoring the marketplace for fish containing levels above those established by the U.S. Food and Drug Administration as safe for human consumption.

Studies continue to show Kepone contamination of sediments and water of the James from Hopewell to Newport News. It is anticipated that levels of Kepone will continue to be found in aquatic life as long as

Kepone persists in river sediments. The Army Corps of Engineers currently is working on a feasibility study to address the various options available with regard to remedial dredging and/or containment of Kepone-contaminated sediments.

Studies are also underway to develop an estuarine model that will predict the transport of Kepone in the aquatic environment and to develop a method to dispose of Kepone-contaminated sludge and wastes in an environmentally safe manner.

Chlorine

Major fish kills in the lower James River in the summers of 1973 and 1974 led to substantial research implicating chlorine from wastewater treatment plants as a potentially significant problem in tidal estuaries. With increasing numbers of sewage treatment plants being brought online, chlorine residuals in Virginia's extensive estuarine system pose an ever-increasing threat to marine life, particularly in the larval stage.

In 1974, a Chlorine Task Force was formed by the Secretary of Commerce and Resources to investigate alternatives to chlorine as a wastewater disinfectant. The Task Force is headed by the Virginia Marine Resources Commissioner, and includes representatives of the State Water Control Board, State Health Department, Virginia Institute of Marine Science, and the Hampton Roads Sanitation District Commission. Substantial effort has been expended to review scientific data on chlorine toxicity and to examine possible alternatives.

Dechlorination has been endorsed by the Task Force as an immediate alternative, and a subcommittee is working to develop a chlorination/dechlorination protocol. Plans are being finalized for a parallel test of bromine chloride and chlorine at a Tidewater sewage treatment plant to test the relative effectiveness of each in wastewater disinfection. Initial indications are that bromine chloride is equally toxic to marine organisms, but may result in a less toxic effluent because smaller quantities are needed for disinfection. Funding for this project has been obtained through the Marine Resource Subcommittee of the Coastal Plains Regional Commission.

Ozone appears to offer excellent potential as an alternative to chlorine, and examination of its applicability and suitability will continue.

Toxic Air Pollutants

The State Air Pollution Control Board presently does not have the capability to monitor and identify toxic, hazardous, or obnoxious air pollutants—and that capability is essential in order to "catch" catastrophic pollution incidents before they occur. The federal government has only designated three substances—asbestos, beryllium, and mercury—as hazardous air pollutants, but the list is sure to grow. The Environmental Protection Agency has proposals to add polyvinyl chloride and polychlorinated bipheyls (PCBs). In Virginia, there has already been trouble with emissions of phosphoric acid, a chemical for which ambient health levels have yet to be established. Work is really just beginning in the area of toxic and hazardous air emissions, and considerable State and federal legislation can be expected in the future.

Legislation

The Kepone incident prompted the introduction in the 1976 General Assembly of a number of bills designed to tighten State controls over the manufacture, distribution, handling, and sale of toxic substances. The legislation passed strengthens existing State laws and requires reporting of all toxic substances made, sold, used, or disposed of in Virginia. Responsibility for control of toxic substances is shared by the Department of Agriculture and Commerce, the Department of Health, the State Water Control Board, and the State Air Pollution Control Board.

The most important piece of legislation passed, the Toxic Substances Information Act (SB 548), requires the State Health Department to collect, catalog, and evaluate information on toxic substances and to disseminate the data to State agencies and the public. An Advisory Council—made up of five citizens appointed by the Governor and representatives of 13 State agencies—was authorized to review and evaluate policies regarding toxic substances, make recommendations to the Health Department, and furnish technical advice. Owners of commercial establishments manufacturing or emitting toxic substances must report to the Health Department information about the substances, their effects, extent of emissions, and protective measures being taken. Penalties for violations range up to $10,000 a day. Another provision of this law plugs a loophole in the 1975 Virginia Pesticides Act, which did not require registration of active pesticide ingredients with the Department of Agriculture and Commerce.

SB 199 amends the 1975 pesticides act to allow the Department of Agriculture and Commerce to deny certification to any pesticide manufacturers found guilty of keeping fraudulent records relating to pesticides. SB 547 requires owners of sewage and industrial waste treatment works to survey the physical, chemical, and biological properties of each discharge into the system and to report results to the State Water Control Board, which has authority to prohibit discharges that may threaten public health or interfere with treatment works. SB 545 broadens the State Board of Health's authority in the area of solid waste disposal to include regulation of disposal of toxic substances.

Recommendations. In order to avert another ecological distaster, the State must have foreknowledge of potential problem areas. It is essential to establish adequate monitoring networks to identify toxic substances in the air, water, and soils, and to ensure good inter-agency communication about potential hazards. The 1976 Toxic Substances Information Act is a first step toward assembling and disseminating the needed information, but it will not do the whole job. The capability for widespread monitoring of toxic substances in the air and water must be developed soon.

Solid Waste and Resource Recovery

Solid Waste and Litter Control

The issue of litter, solid waste disposal, and the need for resource recovery are receiving increased attention in Virginia.

As solid waste volumes continue to rise, the location and management of disposal facilities remains a problem for many Virginia localities. Suitable sites for sanitary landfills are difficult to find. In the western part of the State, the geology and topography does not favor the establishment of landfills, and high water tables in eastern Virginia likewise preclude landfills in many cases. The difficulty of locating landfill sites is exacerbated by the reluctance of nearby residents to have such facilities in their neighborhoods. In the five major urban centers of the State, sufficient solid waste is generated to justify resource recovery methods. Several cities have initiated feasibility studies to investigate recycling and/or energy recovery systems that would salvage the useable parts of their refuse.

Legislation to require refundable deposits on disposable beverage containers failed to pass the 1976 General Assembly, but met with greater support than in previous years. The bills, all based on successful "bottle bills" in Oregon and Vermont, were carried over to the 1977 session. Other legislation, to tax disposable beverage containers to fund litter cleanup programs, was also carried over.

The Council's Solid Waste Committee report, issued in January 1976, focused on three methods of litter control, including mandatory deposit legislation, tax incentives, and behavior modification. The 1976 General Assembly took several positive steps in the area of litter control, adopting two of the litter control methods—tax incentives and behavior modification—supported by the Council.

Litter control legislation passed by the 1976 General Assembly includes HB 1238, which prohibits the sale of metal drink cans with pull

tabs after January 1, 1979, and HB 1237, which authorizes officers to issue litterers tickets for $25 fines to be paid by mail within 96 hours. The Virginia Litter Control Act (HB 455) creates a State litter control program under the Department of Conservation and Economic Development. The law imposes a $2.50 annual tax on manufacturers, distributors, or retailers of litter items and requires the State to undertake an anti-litter campaign involving litter receptacles, free litter bags, and anti-litter research. A survey of litter throughout the State was ordered, and the results were due to be available in the fall of 1976.

Along with the rest of the nation, Virginia must face the challenge of overpackaging. Packaging consumption is now increasing at a faster rate than population. Virginia could set an example by initiating programs to discourage waste in packaging. Packaging can fulfill its function of advertising appeal, without being wasteful.

Recommendations. Virginia should continue to put a high priority on resolving the State's solid waste problems and seeking new methods of recovering resources.

- The State should consider initiating a program to discourage overpackaging waste. Such a program could involve setting up guidelines for packaging based on purpose, establishing public education programs to let consumers know the costs of packaging, setting up mandatory pricing practices to include the cost of packaging on each product, encouraging manufacturers to use recycled materials, and taxing of industries that do not curb unnecessary packaging.

Dredge Spoils

Dredging, while it has the potential for environmental harm, is a necessary activity to prevent gradual shoaling of shipping channels. The crucial problem facing Virginia now is disposal of the dredge spoil.

Historically, spoil from dredging a channel has been deposited in nearby areas either in the water or ashore. Neither is entirely satisfactory from an environmental standpoint. The large diked area at Craney Island has been handling much of the spoil from the lower Chesapeake Bay and its tributaries, but it is expected to be filled to capacity by 1980. Attempts to establish other diked areas for dredge spoil disposal have not been successful in the past. In the next 50 years, some 327 million cubic yards of dredged material will have to be disposed of. Alternate disposal sites will have to be found to accommodate this material if the Port of Hampton Roads is to remain viable.

Recognizing the need to resolve this problem, the Secretary of Commerce and Resources established in June 1976 a special task force to examine the entire question of dredge spoil disposal. The Task Force to Study Future Disposal of Dredged Spoil is composed of representatives of federal and State agencies, local governments in the Hampton Roads area, and private interests. Two subcommittees, Selection of Dredge Spoil Sites and Site Acquisitions Policy, are actively engaged in investigating alternative disposal sites. A final report is expected in 1977.

Disposal of dredged spoils in the open ocean is an alternative the Virginia Institute of Marine Science is examining under mandate from the 1976 General Assembly.

Land Application of Sewage Sludge

Plant performance data of Virginia's 19 largest municipal wastewater treatment plants, representing approximately 67% of total permitted flows within the State, indicate that these facilities generate approximately 200 tons/day of sludge on a dry weight basis. Currently, landfilling and incineration are the predominant disposal methods. These methods ignore the resource value of sewage sludge. Less that 15% of the current sludge volume is applied to the land.

As a result of required upgraded levels of treatment and plant expansions, municipal sludge volumes are expected to more than double within the next 10 years. Thus, the already apparent need to encourage beneficial sludge utilization practices as opposed to resource consumptive disposal methods will become even more critical in the future.

It is anticipated that a considerable portion of industrial sludges and virtually all municipal-type sludges, provided adequate pretreatment is accomplished by industrial contributors, will be amenable to land application practices. Several possible benefits to be realized from a shift to land treatment include cleaner rivers, improved quality and quantity of drinking water, and restoration of nutrients to the soil.

There are, however, many unknowns regarding the properties and effects of metals and other toxic substances on the water table, lack of monitoring at present, lack of political appeal of the concept, and lack of social acceptance by citizens of the State. Such problems do not, however, justify dismissal of land treatment as a priority issue in Virginia. They simply point to the complexity of the issue and its many attendant ramifications.

Land application of sludges has been practiced throughout the world as a soil conditioner on agricultural lands. In the United States, several cities add nutrients to form an excellent marketable fertilizer. Other localities have used liquid sludge in reclamation of strip-mined areas.

The State Water Control Board (SWCB) has adopted a long-range planning goal to determine appropriate beneficial uses of sludge and to promote such utilization practices, in cooperation with localities and other State agencies. The Council on the Environment's strong interest in land application of sewage sludge prompted a request to the Department of Agriculture and Commerce to form a study committee to look into the subject. This committee has worked with the SWCB and the State Department of Health to formulate regulations for land application, now in draft form.

Recommendation. It is clear that sludges which are incinerated and/or landfilled constitute a tremendous waste of a valuable resource, and Virginia should seek out and pursue safe, economically sensible alternatives.

Part III:
Management Recommendations

Pursuant to § 10-184.1(5) of the Code of Virginia, the Council Administrator offers in this part of the annual report an assessment of the Council's success in achieving the purposes of the Virginia Environmental Quality Act and appropriate management recommendations.

Environmental Policy Consistency

Virginia's Environmental Quality Act (see Appendix) has existed since 1972. It establishes basic State environmental policy and *requires* all Virginia laws and policies to be interpreted and administered to the *fullest extent practicable* in accordance with it. (emphasis added) This "consistency" provision has received little attention. It is a continuing requirement of statewide significance that crosses agency and Secretarial lines; no officer or employee, or office or agency, is exempt. Within the existing framework of State law, the Council on the Environment should have a clear role and an adequate resource capability to assist the Governor and his Secretaries in leading the efforts to comply.

Environmental Accountability

For the six years of its existence, the future of the council has been clouded by a debate over *how* (fortunately, not *whether*) to have a locus of environmental responsibility in State government. This debate has taken place both within the Executive Branch (Council's relationship to its member agencies, and their autonomy) and between the Executive Branch and the legislature (each advancing different answers to the organizational issue). Lately, the debate seems more focused: Shall the Council be strengthened within the current Secretarial arrangement, or shall it be abolished and replaced by a new Secretary of Natural Resources? The issue has continued through six years; it ought now to be settled.

It is imperative that the ambiguity of environmental responsibility in State government be eliminated and a clear locus of responsibility be established. Presently, the State has a Secretary of Commerce and Resources, the Council on the Environment, and a diversity of agencies with purview over one aspect of the environment or another. Although this arrangement has allowed a number of significant accomplishments toward the objective of environmental quality, and recent intiatives have been taken in many of the areas previously unattended, most of the very broad, complex issues have not been addressed with any specificity.

Two examples of the ambiguity of responsibility which thwarts the Council's effectiveness come quickly to mind. The first pertains to the language related to the Council's responsibility regarding the joint environmental agencies' budget. § 10-184.1(9) of the Code of Virginia states that one of the duties of the Administrator of the Council is "... coordi-

nating the preparation of a joint environmental agencies' budget, containing sub-budgets, each of which shall be approved by the appropriate board or agency and thereafter submitted to the administrator who shall convey *without change* said budgets to the Secretary and Governor for approval." (emphasis added) It is obvious that this language gives with the one hand and takes away with the other; it suggests, but then precludes, substantial influence by the Administrator in the guiding of the agencies' budgets into a cohesive budget document for environmental management activities within State government.

To a lesser degree, the Administrator's role in the joint permit coordination process represents another ambiguous assignment. Effective efforts at coordinating the regulatory functions are restricted because the law neither requires applicants to seek a joint process nor permits any genuine decision to be made by the Council Administrator, the Council, or any body other than the separate boards and commissions (§ 10-184.2). While this provision of law may have some administrative attractiveness, it does not enable anyone to focus on the larger questions of total environmental impact implicit in a coordinated proceeding.

In short, the Administrator of the Council on the Environment has been given substantial responsibilities without commensurate authority to implement the policies set forth in the Virginia Environmental Quality Act.

Council Role and Membership

Not only has the State's structure and the ambiguity of Council responsibility inhibited the Council's success in implementing the Virginia Environmental Quality Act, but the composition of the Council itself also limits its objectivity. When the Council was originally established, it made great sense to have an environmental council comprising spokesmen from the separate agencies who could meet as a body to discuss ways to coordinate their plans, programs, and activities.

The coordination process has now been established, and has come about largely through the efforts of the agency staffs. This process was aided considerably by the visibility of the agency board chairmen meeting quarterly as members of the Council on the Environment; but the role of those Council members needs to be redefined now that the initial purpose of their participation in the Council has been achieved.

Now the Council's effort has returned to promoting a larger purpose dealing with the development of environmental goals to meet the challenges of new and emerging problems; e.g., the use of land and its relationship to such issues as transportation, energy conservation, and water resource management. In this context, the agency members of the Council have to tackle policy measures beyond the scope of their individual agencies' mandate but well within the broader law of this Council. (It should be noted here that the Governor's appointed members to the Council have of necessity tried to carry out this role, but those three individuals cannot carry the load alone.)

The board chairmen and commissioners on the Council must devote their time not only to their own agencies but also to the Council on the Environment. It may well be that, in the light of the demands required for effective participation on the Council and their other commitments, the agency members might wish to undertake a definition of the scope and intensity of their participation.

Financial Support

A final point should be made in describing the shortcomings of the environmental efforts in Virginia. This is a lack of financial support to carry out effectively the important assignments the Council has been given. It should be obvious from the description in this report of the responsibilities, programs, and activities of the Council that its total staff of six persons has a big job. Consequently, a number of the assigned duties can be carried out only superficially, if at all.

Recommendations. The recommendations regarding the Secretary of Natural Resources made by the Hopkins commission on State Governmental Management should be seriously considered by the General Assembly in 1977. If the recommendations are not adopted in that form, the Council on the Environment should be strengthened or some other basic action should be made to provide for an effective locus of environmental responsibility in State government.

- The Key Facilities legislation under consideration by the 1977 session of the General Assembly should be passed. This legislation would likely eliminate the existing problems regarding the Council's permit coordination responsibility. It would enable the Council to tie the environmental impact statement and permit coordination processes together in dealing with proposed projects and, consequently, to eliminate the fragmentation now evidenced in the provision of environmental services. After accomplishing the task of unifying these activities at the State level, the council could then tie the State review requirements to the local comprehensive planning requirements contained in HB 1304 (Acts of the Assembly, 1975). This is an important direction for the Commonwealth to take in the coming years.
- § 10-184.2.A of the Virginia Environmental Quality Act should be amended to *require* a single unified application, rather than leaving the decision to the discretion of the applicant. This would give the Council Administrator an opportunity to have a joint coordinated permit process for those major projects for which such a process would be appropriate, while reserving to the Council Administrator the discretion to forego such a process for the many small projects that would not benefit from a coordinated review.
- The agency members of the Council, in conjunction with the Administrator, should define specifically their role during the next year.
- The Council's biennial budget requests should be honored. Each year the Council has recommended what it felt was a reasonable amount to do the job assigned it. While realizing the tight financial situation in the Commonwealth, the Council believes the costs involved are minimal compared to the benefits that could be realized.

Appendix

Chapter 17

Virginia Environmental Quality Act

ARTICLE 1. General Provisions

§ 10-177. Short title; definitions.—This chapter may be cited as the "Virginia Environmental Quality Act."

For the purposes of this chapter, the following words are defined:

(1) *"Person"* means any individual or group; any partnership, corporation, association, organization or other legal entity, including any public body.

(2) *"Public body"* means any municipal corporation, county, or other political subdivision of the State; or any agency, department, or instrumentality of the State or of any political subdivision of the State. (1972, c. 774.)

§ 10-178. Declaration of policy.—In furtherance of Article XI of the Constitution of Virginia and in recognition of the vital need of citizens of the Commonwealth to live in a healthful and pleasant environment, it is hereby declared to be the policy of the Commonwealth to promote the wise use of its air, water, land and other natural resources and to protect them from pollution, impairment or destruction so as to improve the quality of its environment.

It shall be the continuing policy of the government of the Commonwealth—in cooperation with the federal government, other state governments, local governments, other public and private organizations, and individuals—to initiate, implement, improve, and coordinate enivronmental plans, programs, and functions of the State in order to promote the general welfare of the people of the Commonwealth and fulfill the State's responsibility as trustee of the environment for the present and future generations. (1972, c. 774.)

§ 10-179. Implementation of policy.—The General Assembly authorizes and directs that, to the fullest extent practicable, the laws, regulations, and policies of the Commonwealth shall be interpreted and administered in accordance with the policies set forth in this chapter, and that the efforts of all State officers and employees shall be coordinated so as to effectuate said policy. (1972, c. 774.)

ARTICLE 2. Council on the Environment

§ 10-180. Council established.—To implement the policy set forth in this chapter, there is hereby established in the office of the Governor a Council on the Environment. (1972, c. 774.)

§ 10-181. Membership; chairman.—The Council on the Environment shall be composed of ten members and an administrator who shall all be

citizens of the State. Three shall be appointed by the Governor on the basis of merit without regard to political affiliation, subject to confirmation by the General Assembly, but they shall be permitted to serve in the interim between appointment and confirmation or rejection. They shall hold office at the pleasure of the Governor until their successors take office. The Administrator of the Council on the Environment shall serve as chairman. The chairmen of the State Water Control Board, the Board of Conservation and Economic Development, the Game and Inland Fisheries Commission, the Marine Resources Commission, the Soil and Water Conservation Commission and the State Air Pollution Control Board and the Commissioner of Health shall also be members of the Council. (1972, c. 774; 1974, c. 354; 1975, c. 263.)

§ 10-182. Compensation of members.—The members of the Council shall receive their necessary expenses incurred in the discharge of functions as members of the Council. (1972, c. 774.)

§ 10-183. Meetings.—The Council shall meet at least once every three months, and other meetings may be held at any time or place determined by the Council or upon call of the administrator. All members shall be notified of the time and place of any meeting at least five days in advance. Five members shall constitute a quorum for the transaction of business. The Council shall keep a complete and accurate record of the proceedings at all its meetings, a copy of which shall be kept on file in the office of the Council and open to public inspection. (1972, c. 774; 1974, c. 354.)

§ 10-184: Repealed by Acts 1974, c. 354.

§ 10-184.1. Appointment, etc., powers and duties of administrator.—The administrator of the Council on the Environment shall be appointed by the Governor, subject to confirmation by the General Assembly, for a term coincident to that of the appointing Governor. Any vacancies occurring in the office of administrator shall be filled by the Governor subject to confirmation by the General Assembly. The administrator of the Council on the Environment shall devote full time to the duties and responsibilities of his office, which shall include the following:

(1) Developing uniform management and administrative systems which will assure coherent environmental policies and which will facilitate provision of environmental services to the public;

(2) Taking necessary steps to promote the efficiency of management and coordinate administrative practices within and among the boards and agencies of the Council including the effective use of personnel resources among the agencies;

(3) [Repealed.]

(4) Coordinating the preparation of a joint environmental agencies' budget, containing subbudgets, each of which shall be approved by the appropriate board or agency, and thereafter submitted to the administrator who shall convey without change said budget or budgets to the Secretary and Governor for approval:

(5) Preparing and submitting annually, with the cooperation of the boards and agencies, an environmental and management report to the Governor and the General Assembly in which he shall assess in detail:

(a) The Council's success in achieving the purposes of the enabling legislation.

(b) The reasons for any failure to achieve those purposes.

(c) Any changes in legislation that the Council believes necessary to better achieve those purposes.

(d) Management actions taken in support of the enabling legislation.

(e) New environmental programs to be considered for legislative action.

(f) New environmentally related programs which should be considered by the General Assembly for transfer to another board or agency or to the jurisdiction of the administrator.

Such reports may be prepared in conjunction with the reports of the Council on the Environment as directed by § 10-186.

The administrator shall employ such personnel and procure the necessary professional services to perform the duties of the office. (1974, c. 354; 1976, c. 466.)

§ 10-184.2. Multiple permit process; powers and duties of the administrator; rules and regulations.—A. If a project requires a State permit or certificate from more than one State environmental regulatory agency, the applicant may make a single unified application to the administrator on a form prescribed by the administrator.

B. Notwithstanding any other provision of law, the administrator shall receive and review the application within twenty-one days and at his discretion may consolidate, coordinate and expedite the permit review process including but not limited to the elimination of redundant or overlapping procedures; consolidation of any formal hearings that may be required into one hearing; and coordination of the processing of permits where both federal and State requirements are involved.

C. For the purposes of this section the State environmental regulatory agencies shall include: the State Air Pollution Control Board; the Board of Conservation and Economic Development; the State Health Department; the Marine Resources Commission; the Soil and Water Conservation Commission and the State Water Control Board.

D. Notwithstanding any other provision of law, the acceptance of an application for multiple permits by the administrator, after the administrator has ascertained that the application is complete and otherwise acceptable, shall commence the processing period as to each board or commission involved. The hearing for a multiple State permit shall be held within sixty days after the application to the administrator is complete; and each board or commission decision on a multiple permit shall be made within ninety days after the application to the administrator is complete. In exceptional circumstances or in light of new information presented during a public hearing, a board or commission may extend the time period for consideration of the multiple permit by a board or commission; provided that the extension shall be for a period not to exceed thirty days.

E. Judgment of the merits of each permit that is required shall remain the responsibility of each respective board or commission. Each board or commission shall make every effort to coordinate its permit review process with the administrator.

F. The Council on the Environment shall have the authority to issue necessary rules and regulations to carry out the provisions of this section. (1976, c. 466.)

§ 10-185. Further responsibility and authority of administrator.—It shall be the further responsibility of the administrator of the Council, in

accordance with provisions and limitations as may be elsewhere set forth in law, to carry out the policy of this chapter. In so doing, the administrator is authorized to:

(1) Coordinate all State communications with federal agencies involving State concern having relation to environmental problems, and to call meetings as needed of heads of State agencies and other personnel to review policies and programs of mutual concern relating to environmental problems;

(2) Make rules and regulations for his own staff organization;

(3) Sue and be sued in the Council's official name;

(4) Enter into and perform contracts; and acquire in any lawful manner personal or real property or any interest therein deemed necessary in the performance of the Council's functions, and to maintain and improve such property or dispose of it when necessary;

(5) Accept and administer services, gifts and other funds donated to the Council to carry out the policy of this chapter;

(6) Engage and pay for the services of professional consultants;

(7) Initiate and supervise research programs.

(8), (9) [Repealed.] (1972, c. 774; 1974, c. 354; 1976, c. 466.)

§ 10-186. Duties.—It shall be the duty of the Council to implement the policy of this chapter. Specifically, the Council shall, among other things:

(1) After holding public hearings annually throughout the State, issue a report on the activities of the Council and the state of the environment. The report shall include, among other things:

(a) An assessment, updated annually, of the environmental choices and their trends and implications projected over a twenty-year period substantially affecting the Commonwealth that are made by any person;

(b) Recommendations to the Governor, updated annually, concerning the policies necessary to exert the influence of the Commonwealth to the fullest extent practicable to change the environmental choices identified in subsection (1) (a) above so as to insure, over the next succeeding twenty-year period, the wise use and wise protection of the State's natural resources to the end that a balance is achieved and maintained between environmental protection and economic well-being of the Commonwealth, such recommendations being made by coordinating to the fullest extent practicable with the interested State agencies; and

(c) An assessment of the effects of State policy in ensuring that the objectives in subsection (1) (b) above are being and will be met.

Each report shall be published, issued to the Governor, and made available for purchase by citizens.

(2) Advise the Governor and General Assembly, and, on request, assist other officers, employees, and public bodies of the State, on matters relating to environmental quality and the effectiveness of actions and programs designed to enhance that quality; and recommend to the officers and public bodies of the State measures it believes are necessary to enhance the quality of the State's environment;

(3) Conduct public hearings throughout the State to give citizens the opportunity to contribute ideas regarding environmental quality; and

(4) Initiate and supervise programs designed to educate citizens on ecology, pollution and its control, technology and its relationship to environmental problems and their solution, population and its relationship to environmental problems, and other matters concerning environmental quality. (1972, c. 774.)

Chapter 18

Environmental Impact Reports of State Agencies

§ 10-17.107. Definitions.—For the purposes of this chapter, the following words shall have the meanings ascribed to them by this section:

(a) *"Environment"* means the natural, scenic and historic attributes to the Commonwealth.

(b) *"Major State facility"* means any State facility construction of which is hereafter undertaken by a State agency, board or commission in the executive branch of the State government, including state-supported institutions of higher learning, and construction of which costs one hundred thousand dollars or more to complete; provided, this term shall not apply to any highway or road construction or any part thereof.

(c) *"Council"* shall mean the Council on the Environment. (1973, c. 384; 1974, c. 270.)

§ 10-17.108. State agencies to submit environmental impact reports on major facilities.—All agencies, boards and commissions within the executive branch of the Commonwealth shall prepare and submit a report to the Council on each major State facility which they propose to construct. Reports by such agencies, boards and commissions shall include, but shall not be limited to, the following:

(1) The environmental impact of the proposed construction;

(2) Any adverse environmental effects which cannot be avoided if the proposed construction is undertaken;

(3) Measures proposed to minimize the impact of the proposed construction;

(4) Any alternatives to the proposed construction; and

(5) Any irreversible environmental changes which would be involved in the proposed construction.

For the purposes of subsection (4), the report shall contain all alternatives considered and the reasons why the alternatives were rejected. If a report does not set forth alternatives, it shall state why no alternatives were considered. (1973, c. 384; 1974, c. 270.)

§ 10-17.109. Council to review report and make statement to Governor.—Within sixty days of the receipt of the environmental impact report by the Council, the Council shall review and make a statement to the Governor commenting on the environmental impact of each major State facility within the executive branch of State government. The statement of the Council shall be available to the General Assembly and to the general public at the time of submission by the Council to the Governor. (1973, c. 384; 1974, c. 270.)

§ 10-17.110. Approval of Governor required for construction of facility.—The State Comptroller shall not authorize payments of funds from the State treasury to a State agency, board or commission for construction of a major State facility unless such request is accompanied by the written approval of the governor after his consideration of the comments of the Council on the environmental impact of such facility. Provided, however this section shall not apply to funds appropriated by the General Assembly prior to June one, nineteen hundred seventy-three, or any reappropriation by the General Assembly of such funds. (1973, c. 384; 1974, c. 270.)

§ 10-17.111. Development of procedures, etc. for administration of chapter.—The Council shall, in conjunction with other State agencies, coordinate the development of objectives, criteria and procedures to assure the orderly preparation and evaluation of environmental impact reports required by this chapter. These procedures shall provide for submission of impact statements in sufficient time to permit any modification of the proposed construction which may be necessitated because of environmental impact. (1973, c. 384; 1974, c. 270.)

§ 10-17.112. Cooperation of State agencies.—All departments, commissions, boards, agencies, offices and institutions within the executive branch of the Commonwealth shall cooperate with the Council in carrying out the purposes of this chapter. (1973, c. 384; 1974, c. 270.)

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